US Army Corps
of Engineers
Philadelphia District

2018 ANNUAL SUMMARY REPORT

Pearce Creek Confined Disposal Facility

February 2019

1.0 INTRODUCTION

This Annual Summary Report was developed at the request of the Maryland Department of the Environment (MDE) in accordance with the MDE's approval of the Groundwater Monitoring Plan (GWMP), as part of renewing placement of dredge material by the U.S. Army Corps of Engineers, Philadelphia District (USACE) at the Pearce Creek Confined Disposal Facility (CDF). The MDE approved the GWMP on February 16, 2017.

The Pearce Creek CDF is located in Earleville, Cecil County, Maryland, immediately south of Pearce Creek and the eastern shore of the Elk River, a major tributary of the Chesapeake Bay. The CDF is bounded by residential properties to the west, by residential, agricultural, and undeveloped properties to the south and east, and by Pearce Creek and the Elk River to the north.

The purpose of the Annual Summary Report is to present groundwater sampling and water level data to monitor potential changes in groundwater quality resulting from the installation of an impermeable liner designed to mitigate the effects of future and past dredge disposal at the Pearce Creek CDF. The initial Annual Summary Report (prepared in 2016) summarized historical groundwater sampling performed at the site from 1996 (when wells were first installed) to 2016. The 2017 Annual Summary Report summarized the installation of monitoring wells agreed to as part of the GWMP, groundwater flow in the 3 primary water-bearing units, and the first 2 rounds of groundwater sampling from the new network of monitoring wells around the CDF. This specific report summarizes the continued groundwater sampling of the network of monitoring wells around the CDF.

Placement of dredge material into the CDF occurred intermittently from mid-December 2017 to mid-February 2018, then again for the final 3 weeks of December 2018, from December 12, 2018 to January 4, 2019.

2.0 FIELD WORK

Seventeen groundwater monitoring wells were drilled and installed at eleven locations along the perimeter of the CDF in May and June 2017, in accordance with the GWMP. One planned monitoring well (CSW-30) was not installed due to a lack of saturated sand in the shallow Magothy formation at that location. Figure 1 presents the locations of the monitoring wells that are part of the GWMP. Well construction details are summarized in Table 1.

There is now a network of 36 monitoring wells as part of the GWMP. This includes 16 wells in the Magothy aquifer, 13 wells in the Upper Patapsco Shallow aquifer, and 7 wells in the Upper Patapsco Deep aquifer. Figures 2, 3, and 4 show well locations in the Magothy, Upper Patapsco-Shallow, and Upper Patapsco-Deep aquifers, respectively. Geologic cross sections and fence diagrams presented in the 2017 annual report show the vast amount of thick clay and silt units in the subsurface separating generally thinner, interwoven, laterally discontinuous water-bearing sands.

2.1 Groundwater Elevation Monitoring

To evaluate potential local seasonal variations in groundwater elevation and flow direction and also to evaluate potential changes in hydraulic head due to the installation of the impermeable liner at the CDF, site-wide groundwater elevation data was manually obtained on January 3, March 28, June 7, and October 18, 2018. Water levels for each round were measured over a short time span to make the data as synoptic as possible. The data were generally collected within a period of two hours. Local tidal charts were consulted to temporally place the data within the daily tidal periods.

Groundwater elevation data are presented in Attachment A. Groundwater elevation contour maps were generated for the Magothy, the Upper Patapsco-Shallow, and the Upper Patapsco-Deep aquifers for the spring (March) and fall (October) measurement rounds. These figures are also included in Attachment A and show that groundwater flow in each aquifer was relatively consistent throughout the year. It is also noted that tidal influence is most pronounced in the Upper Patapsco-Shallow aquifer more so than within the Magothy or Upper Patapsco-Deep aquifers. One other note of interest is that Pearce Creek Lake seems to act as a constant-head boundary creating a groundwater mound extending beneath the CDF, especially for the Magothy aquifer, and to a lesser degree the Upper Patapsco-Shallow aquifer.

2.2 Groundwater Sampling

Two rounds of groundwater samples were collected from all wells that are part of the groundwater monitoring program. The first sampling event was in April and May 2018, and the second round of sampling was conducted in October 2018. All groundwater sampling was performed by Tetra Tech personnel who are MDE-certified water samplers. Monitoring well locations are shown on Figures 1 through 4, and construction details (depths, screened intervals, and aquifer) of these wells are specified in Table 1.

Groundwater sampling was conducted using standard U.S. Environmental Protection Agency (EPA) low stress (low flow) guidelines. Samples were collected following stabilization of groundwater quality parameters, and in accordance with the GWMP, analyzed using standard EPA and/or MDE methods for the following parameters:

- Total Metals: Aluminum, Arsenic, Beryllium, Cadmium, Calcium, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Sodium, and Zinc
- General Chemistry Parameters: Alkalinity, Total Dissolved Solids, Total Suspended Solids, Fluoride, Chloride, Bromide, Sulfate, Nitrogen (nitrite and nitrate), Nitrogen (nitrate), and Nitrogen (nitrite)
- Radiologic Parameters: Radium 226, Radium 228, Gross Alpha, and Gross Beta

All samples were analyzed by TestAmerica, operating as a subcontractor to White Water Associates, Inc. TestAmerica Savannah maintains MDE certification for potable water and is accredited under Department of Defense (DOD) Environmental Laboratory Accreditation Program (ELAP). TestAmerica St. Louis performed the radiochemistry analyses. This

laboratory maintains Nuclear Regulatory Commission (NRC) licenses for these analyses, has MDE certification, and is also accredited under DOD ELAP. The samples were shipped on a daily basis via FedEx overnight delivery service.

3.0 LABORATORY ANALYSIS AND GROUNDWATER SAMPLING RESULTS

Tables 2 and 3 summarize the results for the 2018 spring and fall sampling events, respectively. Table 4 presents historical results from both the 2017 and 2018 sampling of the new network of monitoring wells in the groundwater monitoring program.

The sampling results are compared with the Federal USEPA Maximum Contaminant Levels (MCLs) for drinking water quality and Secondary Drinking Water Regulations (non-mandatory standards based on aesthetics – taste, color, odor), as well as Groundwater Quality Standards established by the MDE.

4.0 FUTURE ACTIVITIES

- The new network of wells will continue to be sampled as part of the GWMP (a total of 36 monitor wells and piezometers). Two groundwater sampling events (spring and fall) spaced approximately 6 months apart will be conducted in 2019.

- Water levels and groundwater flow direction will continue to be monitored on a regular basis at the CDF.

- Placement of dredge material into the CDF is expected to resume sometime in the fall 2019.

- The USACE will develop a database for the project which in the future will allow better evaluation of groundwater chemistry changes over time.

- The fourth annual report will be submitted in February 2020. This report will include 2019 sampling results from the network of wells around the CDF. Groundwater quality trend plots (if applicable), groundwater elevation contour maps, and other pertinent information also will be included in subsequent annual reports.

TABLES

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS
PEARCE CREEK GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

WELLS INSTALLED 2017 FOR THE GROUNDWATER MONITORING PROGRAM

Well Identifier	Well Total Depth	Borehole Total Depth	PVC Diameter	Screen Interval	Screen Elevation	Sand Pack Interval	Sand Pack Elevation	Northing	Easting	Elevation NAVD88			Aquifer
										Top of Casing	Top of PVC	Ground	
	feet bgs		inches	feet bgs	feet BMSL	feet bgs	feet BMSL	NAD83		feet AMSL			
CSW-27	50.5	56	4	40.5 - 50.5	8.58 - 18.58	34 - 56	2.08 - 24.08	641445.523	1598175.768	35.57	35.26	31.92	Magothy
CSW-28	140	146	4	130 - 140	97.89 - 107.89	124 - 146	91.89 - 113.89	641442.561	1598166.430	35.56	35.23	32.11	Patapsco - Shallow
CSW-29	47	51	4	37 - 47	8.84 - 18.84	31 - 51	2.84 - 22.84	642684.596	1597722.308	31.32	31.20	28.16	Magothy
CSW-30	-----		Well Not Installed - Magothy Aquifer Consisted Entirely of Clay										Magothy
CSW-31	145	156	4	135 - 145	113.88 - 123.88	129 - 156	107.88 - 134.88	644664.678	1600500.662	24.02	23.90	21.12	Patapsco - Shallow
CSW-32	53	56	4	48 - 53	25.22 - 30.22	42 - 56	19.22 - 33.22	643133.172	1601445.241	25.60	25.49	22.78	Magothy
CSW-33	166	167	4	161 - 166	138.23 - 143.23	155 - 167	132.23 - 144.23	643140.598	1601442.797	25.57	25.45	22.77	Patapsco - Shallow
CSW-34	196	216	4	191 - 196	158.44 - 163.44	185 - 203	152.44 - 170.44	641438.833	1598156.188	35.70	35.47	32.56	Patapsco - Deep
CSW-35	265	266	4	255 - 265	230.31 - 240.31	248 - 266	223.31 - 241.31	642576.531	1597167.435	28.02	27.82	24.69	Patapsco - Deep
CSW-36	210	276	4	200 - 210	178.93 - 188.93	191 - 215	169.93 - 193.93	641660.783	1601250.337	24.30	24.13	21.07	Patapsco - Deep
CSW-37	135	206	4	130 - 135	110.84 - 115.84	124 - 143	104.84 - 123.84	644963.200	1599108.262	22.04	21.84	19.16	Patapsco - Shallow
CSW-38	233.5	236	4	228.5 - 233.5	205.86 - 210.86	222.5 - 235	199.86 - 212.36	643929.086	1600999.147	26.64	26.16	22.64	Patapsco - Deep
CSW-39	285	286	4	275 - 285	247.35 - 257.35	264 - 286	236.35 - 258.35	644425.568	1598434.781	31.19	30.89	27.65	Patapsco - Deep
PZ-1	32	36	2	27 - 32	7.65 - 12.65	21 - 36	1.65 - 16.65	644964.826	1599115.090	22.63	22.51	19.35	Magothy
PZ-2	65	66	2	60 - 65	37.44 - 42.44	54 - 66	31.44 - 43.44	643933.022	1601006.901	25.66	25.45	22.56	Magothy
PZ-3	54	76	2	49 - 54	27.89 - 32.89	43 - 76	21.89 - 54.89	642586.996	1602043.597	24.03	23.87	21.11	Magothy
PZ-4	86	86.5	2	76 - 86	54.75 - 64.75	70 - 86.5	48.75 - 65.25	641654.704	1601244.735	24.38	24.20	21.25	Magothy
PZ-5	48.5	90	2	38.5 - 48.5	1.02 - 11.02	32 - 90	7.52 - 50.48	641686.897	1600070.702	42.75	42.62	39.52	Magothy
WELLS INSTALLED PRIOR TO 2017													
CSW-5	90		4	80 - 90	33.18 - 43.18			640418.877	1600881.043	47.03	46.82	46.82	Magothy
CSW-7	91		4	81 - 91	73.26 - 83.26			643973.655	1596467.431	8.05	7.74	7.74	Patapsco - Shallow
CSW-9	125		4	115 - 125	87.47 - 97.47			643685.642	1598170.755	31.22	30.85	27.53	Patapsco - Shallow
CSW-10	115		2	100 - 115	71.05 - 86.05			642664.840	1597714.757	32.21	31.91	28.95	Patapsco - Shallow
CSW-13	53		4	48 - 53	32.75 - 37.75			643662.830	1602744.431	17.81	17.26	15.25	Magothy
7A	16		4	11 - 16	+0.07 - 4.93			643813.575	1596529.126	11.52	11.07	11.07	Magothy
7B	222		4	217 - 222	206.22 - 211.22			643821.173	1596527.150	11.32	10.78	10.78	Patapsco - Deep
8A	89		4	79 - 89	55.48 - 65.48			643003.316	1595973.516	25.61	25.43	23.52	Patapsco - Shallow
8B	44		4	39 - 44	15.45 - 20.45			642997.164	1595969.647	25.79	25.49	23.55	Magothy
11A	198		4	188 - 198	167.22 - 177.22			645346.666	1599775.912	23.75	23.51	20.78	Patapsco - Deep
11C	30		4	20 - 30	+0.74 - 9.26			645349.364	1599787.526	23.88	23.51	20.74	Magothy
11R	128.5		4	118.5 - 128.5	97.80 - 107.80			645348.041	1599781.345	23.76	23.43	20.70	Patapsco - Shallow
12R	40		4	35 - 40	+1.69 - 3.31			640990.466	1599205.972	39.79	39.48	36.69	Magothy
13A	145		4	135 - 145	119.05 - 129.05			643691.094	1602757.833	19.72	19.35	15.95	Patapsco - Shallow
14R	118		4	108 - 118	71.36 - 81.36			640991.624	1599197.731	39.58	39.36	36.64	Patapsco - Shallow
16A	40		4	30 - 40	8.52 - 18.52			642637.393	1597186.522	24.41	24.18	21.48	Magothy
18B	87		4	77 - 87	50.26 - 60.26			644215.947	1598234.884	30.38	30.10	26.74	Patapsco - Shallow
21S	67		4	57 - 67	35.61 - 45.61			642126.368	1602756.547	24.13	23.93	21.39	Magothy
21D	150		4	145 - 150	123.86 - 128.86			642120.688	1602755.418	23.89	23.53	21.14	Patapsco - Shallow

bgs = below ground surface AMSL = above mean sea level BMSL = below mean sea level

TABLE 2
SPRING 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**7A**		**7B**		**8A**		**8B**		**11A**		**11C**		**11R**		**12R**		**13A**	
Sample Number:	**SMCL**	**7A-20180508**		**7B-20180508**		**8A-20180508**		**8B-20180508**		**11A-20180430**		**11C-20180501**		**11R-20180430**		**12R-20180509**		**13A-20180502**	
Date Sampled:	[1]	**5/8/2018**		**5/8/2018**		**5/8/2018**		**5/8/2018**		**4/30/2018**		**5/1/2018**		**4/30/2018**		**5/9/2018**		**5/2/2018**	
Duplicate of:																			
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.08*	J	0.031	J	*2.3*		*1.5*		0.019	J	*6*		0.039	J	*0.14*		*1.5*	
ARSENIC	0.01	0.003	U	0.003	U	0.004		0.0015	J	0.003	U	0.003	U	0.003	U	0.0022	J	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0024		0.0025		0.0004	U	0.0022		0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.00056		0.00078		0.0004	U	0.0032		0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	5.1		19		63		50		16		21		8.8		1500		26	
IRON	0.3	*13*		*18*		*13*		0.055	J	*6*		*19*		*18*		*0.99*		*1.2*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0013	J
MAGNESIUM	NS	2.2		3.2		33		34		2.2		17		1.7		1.6		1	
MANGANESE	0.05	*0.52*		*0.16*		*19*		*7.8*		*0.11*		*8.6*		*0.13*		*0.39*		0.022	U
NICKEL[2]	0.073	0.0049	J	0.005	U	0.052		0.041		0.005	U	0.057		0.005	U	0.05		0.0028	J
POTASSIUM	NS	0.98	J	11		5.5		4.8		29		3.4		2.3		11		27	
SODIUM	NS	6.4		20		74		190		33		21		9.7		240		28	
ZINC	5	0.02	U	0.02	U	0.33		0.2		0.02	U	0.26		0.02	U	0.013	J	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.37	J	0.44	J	0.76		0.63		0.22	J	0.27	J	0.5	U	11		0.5	U
CHLORIDE	250	8.9		38		98		*300*		17		18	J	4.4		*2200*		3.8	
FLUORIDE	2	0.1		0.093	J	1		0.47		0.085	J	0.27	J	0.082	J	1	U	0.14	
SULFATE	250	1.6		24		*430*		*270*		14		110		27		*260*		50	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.93		0.05	U	0.05	U	9		0.05	U	1.5		0.05	U	0.037	J	0.05	U
NITROGEN, NITRITE	1	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.45		0.025	U	0.025	U	7.8		0.025	U	1.2		0.025	U	0.1		0.025	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	0.288	U	1.94	J	13.4		7.27		0.333	U	2.79	U	2.97	J	1.98	U	0.918	U
GROSS BETA[4]	50	1.67	J	11.4		16.1		9.68		25.9		4.66		4.22		21.6	U	22.8	
RADIUM-226[5]	5	0.155	J	0.754	J	**1.69**		**1.2**		0.769	J	0.082	U	0.912	J	0.48	J	0.394	J
RADIUM-228[5]	5	0.171	U	1.02		**9.15**		**4.39**		0.503	J	0.589	J	0.3	U	0.799	J	0.132	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	21		44		5	U	5	U	120		83		58		820		74	
TOTAL DISSOLVED SOLIDS	500	83		160		*850*		*1000*		190		350		92	U	*10000*		250	
TOTAL SUSPENDED SOLIDS	NS	53		27		1	U	1	U	11		13		4.9		45		25	
Field Parameters																			
pH (S.U.)	6.5-8.5	**6.14**		**6.15**		**3.86**		**4.19**		7.14		**5.73**		**6.09**		**11.66**		**10.42**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.118		0.356		1.19		1.56		0.404		0.426		0.189		6.12		0.367	
TEMPERATURE (°C)	NS	24.04		15.47		16.18		19.21		14.56		17.04		15.33		19.52		16.98	
TURBIDITY (NTU)	NS	7.62		2.04		1.2		1.85		9.83		19.8		1.14		5.58		17.8	
DISSOLVED OXYGEN (mg/L)	NS	0		1.97		0.3		1.68		0		1.42		0		0		0.38	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-26		-140		244		380		-125		4		-22		-195		-211	

TABLE 2
SPRING 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**14R**		**16A**		**18B**		**18B**		**21D**		**21S**		**CSW-5**		**CSW-5**	
Sample Number:	**SMCL**	**14R-20180504**		**16A-20180507**		**18B-20180507**		**DUP-03-20180507**		**21D-20180502**		**21S-20180502**		**CSW-5-20180509**		**DUP-04-20180509**	
Date Sampled:	[1]	**5/4/2018**		**5/7/2018**		**5/7/2018**		**5/7/2018**		**5/2/2018**		**5/2/2018**		**5/9/2018**		**5/9/2018**	
Duplicate of:								**18B-20180507**								**CSW-5-20180509**	
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*15*	J	0.026	J	0.05	U	0.018	J	*0.55*		*50*		0.022	J	0.025	J
ARSENIC	0.01	**0.015**		0.003	U	0.0015	J	0.0015	J	0.003	U	**0.017**		0.0027	J	0.0027	J
BERYLLIUM	0.004	**0.0075**		0.0004	U	0.0004	U	0.0004	U	0.00074		**0.0068**		0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.00022	J	0.0004	U	0.0004	U	0.0004	U	0.004		0.0004	J	0.00042	J
CALCIUM	NS	240		64		44		45		52		210		200		190	
IRON	0.3	*390*		*20*		*19*		*20*		*1.7*		*270*		*590*		*610*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	210		42		2.4		2.4		0.24	J	200		180		170	
MANGANESE	0.05	*200*		*26*		*0.15*		*0.15*		0.047		*170*		*150*		*160*	
NICKEL[2]	0.073	***0.77***		0.0066		0.005	U	0.005	U	0.005	U	***0.4***		***0.18***		***0.18***	
POTASSIUM	NS	22		10		2.9		3		40		12		14		14	
SODIUM	NS	400		38		8.2		8.3		80		360		300		290	
ZINC	5	1.9		0.0099	J	0.02	U	0.02	U	0.02	U	1.1		0.17	J	0.17	J
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	4.4	J	0.5	U	0.22	J	0.22	J	0.5	U	2.8		4.5	J	3.3	J
CHLORIDE	250	*650*		25		8.5		8.4		27		*500*		*450*		*430*	
FLUORIDE	2	1.1	J	0.1	U	0.07	J	0.071	J	0.2		0.24		1	U	1	U
SULFATE	250	*3000*		*440*		0.97	J	0.99	J	28		*3400*		*3000*		*3200*	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.072		0.03	J	0.031	J	0.05	U	0.05	U	0.05	U	0.05	U
NITROGEN, NITRITE	1	0.05	UJ	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.025	UJ	0.032	J	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**	*	**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	31.4	U	6.03		0.827	U	2.64	J	5.01		2.14	U	29.9	U	14.4	U
GROSS BETA[4]	50	32.7		6.5		2.2	J	2.06	J	32.3		14.3	U	11.8	U	19	J
RADIUM-226[5]	5	**1.74**		0.345	U	0.42	J	0.534	J	0.546	J	**1.58**		0.289	J	0.254	J
RADIUM-228[5]	5	**12**		0.622	J	0.374	J	0.567	J	0.213	U	**9.55**		1.97		1.19	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	5	U	64		160	J	89	J	110		5	U	15	J	5	U
TOTAL DISSOLVED SOLIDS	500	*5100*		*770*		190		250		420		*4600*		*4900*		*4900*	
TOTAL SUSPENDED SOLIDS	NS	6.7		12		47		47		80		1.1		33		31	
Field Parameters																	
pH (S.U.)	6.5-8.5	**4.03**		**5.93**		6.78		NA		**11.26**		**3.86**		**5.29**		NA	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	5.18		1.04		0.406		NA		1.07		4.59		4.98		NA	
TEMPERATURE (°C)	NS	17.36		21.53		17.97		NA		14.84		20.22		16.9		NA	
TURBIDITY (NTU)	NS	3.13		9.95		3.03		NA		121		1		3		NA	
DISSOLVED OXYGEN (mg/L)	NS	0.21		0		0		NA		0.65		0		0		NA	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	134		47		-133		NA		-300		277		25		NA	

TABLE 2
SPRING 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-7**		**CSW-9**		**CSW-10**		**CSW-13**		**CSW-27**		**CSW-28**		**CSW-29**		**CSW-29**	
Sample Number:	**SMCL**	**CSW-7-20180508**		**CSW-9-20180501**		**CSW-10-20180426**		**CSW-13-20180502**		**CSW-27-20180427**		**CSW-28-20180427**		**CSW-29-20180426**		**DUP-01-20180426**	
Date Sampled:	[1]	**5/8/2018**		**5/1/2018**		**4/26/2018**		**5/2/2018**		**4/27/2018**		**4/27/2018**		**4/26/2018**		**4/26/2018**	
Duplicate of:																**CSW-29-20180426**	
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	0.12		0.045	J	*34*		*0.2*		*0.34*		*15*		0.05	U	0.02	J
ARSENIC	0.01	0.0044		0.003	U	**0.011**		0.0024	J	0.0045		**0.012**		0.0079		0.0081	
BERYLLIUM	0.004	0.0035		**0.0086**		**0.02**		0.00069		0.00017	J	**0.0062**		0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0024		0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	240		290		280		20		140		190		55		56	
IRON	0.3	*280*		*610*		*520*		*47*		*320*		*390*		*61*		*62*	
LEAD	0.015	0.0025	U	0.0025	U	0.0044		0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	210		210		230		10		140		200		36		37	
MANGANESE	0.05	*190*		*180*		*230*		*1.9*		*86*		*150*		*33*		*32*	
NICKEL[2]	0.073	***1.3***		***0.53***		***0.52***		0.026		0.058	J	***0.69***	J	0.02		0.021	
POTASSIUM	NS	11		14		19		2.9		19	J	18	J	11		11	
SODIUM	NS	340		370		510		32		280		330		31		32	
ZINC	5	3.6		0.017	J	1.3		0.074		0.064	J	1.2	J	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	2.6		2.4		2.8		0.5	U	2.6		2.6		0.51		0.75	J
CHLORIDE	250	*550*		*590*		*660*		54		*420*		*590*		16		17	
FLUORIDE	2	0.077	J	0.1	UJ	1.4		0.14		0.2	U	1		0.081	J	0.32	J
SULFATE	250	1	U	*2800*		*3700*		180		*1700*		*2800*		250		250	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	NA		0.05	U	NA		NA		NA		NA	
NITROGEN, NITRITE	1	0.05	U	0.05	U	NA		0.05	U	NA		NA		NA		NA	
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.025	U	0.025	U	0.025	U	0.025	UJ	1.8	J	0.025	U	0.025	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	7.76	U	-3.05	U	21.9	U	1.41	U	6.63	U	22.2	U	0.536	U	2.82	U
GROSS BETA[4]	50	15.4		7.08	U	39.9		3.07	J	17.1		18.8		10.2		9.14	
RADIUM-226[5]	5	**1.89**		0.662	J	**1.3**		0.296	J	0.22		1.4		0.223	U	0.279	U
RADIUM-228[5]	5	**4.31**		1.27		**14.1**		-0.00193	U	1.15		3.57		0.235	U	0.43	J
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	5	U	83		5	U	5	U	59		5	U	150		150	
TOTAL DISSOLVED SOLIDS	500	*4200*		*5100*		*6200*		340		*2900*		*5100*		*560*		450	
TOTAL SUSPENDED SOLIDS	NS	13		6.1		11		7		46		36		67		80	
Field Parameters																	
pH (S.U.)	6.5-8.5	**5.38**		**5.55**		**4.08**		**6.14**		**5.35**		**4.98**		6.52		NA	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	4.81		5.75		5.78		0.562		3.46		5.33		0.988		NA	
TEMPERATURE (°C)	NS	21.06		15.24		17.99		16.35		15.79		13.37		16.63		NA	
TURBIDITY (NTU)	NS	6.2		2.01		11.7		7.31		9.12		8.83		6.64		NA	
DISSOLVED OXYGEN (mg/L)	NS	0		0		0		0		0.94		0		2.53		NA	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	74		26		183		-30		-19		45		-144		NA	

TABLE 2
SPRING 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-31**		**CSW-32**		**CSW-33**		**CSW-34**		**CSW-35**		**CSW-36**		**CSW-37**	
Sample Number:	**SMCL**	**CSW-31-20180501**		**CSW-32-20180503**		**CSW-33-20180503**		**CSW-34-20180427**		**CSW-35-20180426**		**CSW-36-20180503**		**CSW-37-20180425**	
Date Sampled:	[1]	**5/1/2018**		**5/3/2018**		**5/3/2018**		**4/27/2018**		**4/26/2018**		**5/3/2018**		**4/25/2018**	
Duplicate of:															
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.13*		0.05	U	*0.74*		*0.6*		*0.13*		*0.38*		0.05	U
ARSENIC	0.01	0.003	U	0.0018	J	0.003	U	0.0016	J	0.0021	J	0.0018	J	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	110		150		180		350		390		480		13	
IRON	0.3	*1.8*		*670*		*2.2*		0.2		0.21		0.084	U	*24*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	0.46		80		3.6		0.09	J	0.031	J	0.058	U	2.6	
MANGANESE	0.05	0.038		*9*		*0.57*		0.0021	U	0.005	U	0.0043	U	*0.19*	
NICKEL[2]	0.073	0.015		0.0072		0.0074		0.02	J	0.019		0.019		0.005	U
POTASSIUM	NS	15		6.1		21		120	J	330		70		2.3	
SODIUM	NS	30		160		30		100		210		70		19	
ZINC	5	0.072		0.02	U	0.017	J	0.02	UJ	0.02	U	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.66		2.1	J	0.45	J	1		0.57		0.77		0.32	J
CHLORIDE	250	44		*280*		24		39		23		38		31	
FLUORIDE	2	0.12	J	0.5	U	0.12		0.1	U	0.1	U	0.12		0.083	J
SULFATE	250	6.3	J	*2400*		9.1		28		64		7.4		0.7	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	0.05	U	NA		NA		0.035	J	0.05	R
NITROGEN, NITRITE	1	0.05	U	0.05	U	0.05	U	NA		NA		0.05	U	0.05	R
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.025	UJ	0.025	UJ	0.096	J	0.041	J	0.084	J	0.025	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	0.47	U	-7.08	U	-0.807	U	11.4	U	7.92	U	-5.83	U	0.272	U
GROSS BETA[4]	50	10.3		8.41	U	49.3		***95.4***		***252***		44		2.3	J
RADIUM-226[5]	5	0.391	J	0.326	J	0.484	J	1.07		1.73		1.59		0.526	U
RADIUM-228[5]	5	0.452	J	1.02		0.331	U	0.776	J	1.1		1.14		0.768	J
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	240		5	U	380		990		1600		1300		68	
TOTAL DISSOLVED SOLIDS	500	*4000*		*2900*		470		*1500*		*1700*		*1600*		130	
TOTAL SUSPENDED SOLIDS	NS	21		160		62		5.7		3.1		5		11	
Field Parameters															
pH (S.U.)	6.5-8.5	**12.51**		**5.72**		**12.29**		**13.21**		**12.56**		**12.05**		**5.99**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	1.63		3.14		2.27		6.27		7.12		6.07		0.268	
TEMPERATURE (°C)	NS	16.55		16.01		15.91		14.78		15		21.33		14.41	
TURBIDITY (NTU)	NS	6.81		14.9		8.44		5.24		0.11		2.75		0	
DISSOLVED OXYGEN (mg/L)	NS	0		0.52		0		0		0.56		0.75		1.57	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-317		-144		-266		-425		-306		-313		-132	

TABLE 2
SPRING 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-38**		**CSW-39**		**PZ-1**		**PZ-2**		**PZ-2**		**PZ-3**		**PZ-4**		**PZ-5**	
Sample Number:	**SMCL**	**CSW-38-20180501**		**CSW-39-20180507**		**PZ-1-20180425**		**PZ-2-20180501**		**DUP-02-20180501**		**PZ-3-20180502**		**PZ-4-20180503**		**PZ-5-20180509**	
Date Sampled:	**(1)**	**5/1/2018**		**5/7/2018**		**4/25/2018**		**5/1/2018**		**5/1/2018**		**5/2/2018**		**5/3/2018**		**5/9/2018**	
Duplicate of:										**PZ-2-20180501**							
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.51*		*11*	J	0.018	J	0.05	U	0.05	U	*16*		*5.7*		0.028	J
ARSENIC	0.01	0.003	U	0.003	U	0.003	U	0.005		0.0055		0.0077		0.0046		0.0018	J
BERYLLIUM	0.004	0.0004	U	0.00053		0.0004	U	0.0004	U	0.0004	U	**0.0084**		**0.0056**		0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0011		0.0004	U	0.00058	
CALCIUM	NS	220		28		210		11		11		170		200		43	
IRON	0.3	*13*		*3.9*		*130*		*76*		*81*		*290*		*170*		*5.8*	
LEAD	0.015	0.0025	U	0.0023	J	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	3.9		1.7		220		9.4		10		140		92		21	
MANGANESE	0.05	*0.18*		*0.064*		*33*		*0.86*		*0.92*		*92*		*77*		*16*	
NICKEL[2]	0.073	0.009		0.0038	J	0.005	U	0.005	U	0.0019	J	***0.36***		***0.15***		***0.11***	
POTASSIUM	NS	13		39		27		1.3		1.4		14		20		6.5	
SODIUM	NS	32		48		400		55		59		280		160		31	
ZINC	5	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.66		0.064		0.35	J
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.82		0.29	J	7.8	J	0.51	J	0.5	J	2		2.1	J	0.41	J
CHLORIDE	250	64		35		*720*		27	J	27	J	*280*		220		23	
FLUORIDE	2	0.14	J	0.11		2.5	U	0.11	J	0.11	J	0.43		0.49	J	0.1	U
SULFATE	250	52	J	7.2		*1300*	J	100	J	99	J	*2400*		*1500*		210	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	0.05	R	0.1	U	0.1	U	0.05	U	0.05	U	0.23	
NITROGEN, NITRITE	1	0.05	U	0.05	U	0.05	R	0.10	U	0.10	U	0.05	U	0.05	U	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.015	J	0.029	J	0.025	U	0.025	U	0.025	U	0.025	UJ	0.28	
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	2.67	U	6.41		-4.39	U	3.61	J	-0.803	U	3.47	U	7.57	U	3.02	
GROSS BETA[4]	50	9.45		34.4		21		2.05	J	1.19	U	8.88	U	14.7		5.81	
RADIUM-226[5]	5	0.294	J	0.731	J	0.273	U	1.09		1.05		0.382	J	0.733	J	0.275	J
RADIUM-228[5]	5	0.494	J	0.474	J	1.11		0.55	J	0.965	J	1.69		1.31		0.402	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	380		110		550		120		130		5	U	66		56	
TOTAL DISSOLVED SOLIDS	500	66	U	220		*3200*		330		330		*3200*		*2500*		430	
TOTAL SUSPENDED SOLIDS	NS	45		200		59		48		51		1200		43		3.1	
Field Parameters																	
pH (S.U.)	6.5-8.5	**12.05**		**10.7**		**6.37**		6.98		NA		**5.02**		**5.47**		**5.43**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	3		0.64		4.73		0.712		NA		3.18		3.14		0.681	
TEMPERATURE (°C)	NS	18.88		15.66		16.16		16.65		NA		21.75		23.2		16.85	
TURBIDITY (NTU)	NS	15.8		158		1.98		9.81		NA		8.8		17.3		3.64	
DISSOLVED OXYGEN (mg/L)	NS	0.32		0.13		0		0		NA		0		0		0.79	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-317		-313		-87		-185		NA		108		12		55	

TABLE 2
SPRING 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Limit of Quantitation (LOQ).
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.
NS -- Not Specified

*The radionuclide portion of the sample was collected on 4/26/2018. All other parameters were recollected on 5/7/2018.

(1)MCL = Maximum Contaminant Level National Primary and Secondary Drinking Water Regulations, August 2009.
(2)The Nickel screening level is the Maryland Department of the Environment (MDE) Groundwater Cleanup Standard.
(3)Some non-detect results for Gross Alpha were greater than the screening level
(4)The Gross Beta screening value is 4 millirems per year which cannot be applied to the value reported for Gross Beta in pCi/L, therefore guidance purposes, the Gross Beta results will be compared with the 50 pCi/L screening level provided in the Code of Federal Regulations (CFR) and Code of Maryland Regulations (COMAR) sampling and analysis requirements.
(5)MCL is for Ra-226 and Ra-228 combined.
Bold values exceed the EPA MCL
Italicized values exceed the EPA secondary standard
Bold, italicized values exceed the MDE standard or COMAR standard.

TABLE 3
FALL 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**7A**		**7B**		**8A**		**8B**		**11A**		**11C**		**11R**		**12R**		**13A**	
Sample Number:	**SMCL**	**7A-20181024**		**7B-20181024**		**8A-20181018**		**8B-20181018**		**11A-20181017**		**11C-20181016**		**11R-20181017**		**12R-20181025**		**13A-20181019**	
Date Sampled:	[1]	**10/24/2018**		**10/24/2018**		**10/18/2018**		**10/18/2018**		**10/17/2018**		**10/16/2018**		**10/17/2018**		**10/25/2018**		**10/19/2018**	
Duplicate of:																			
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.066*	J	*0.05*	U	*1.8*		*1.5*		*0.055*	J	*17*	J	*0.18*		*0.09*	J	*0.23*	J
ARSENIC	0.01	0.003	U	0.003	U	0.0042		0.002	J	0.003	U	0.0036		0.003	U	0.0017	J	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0017		0.0026		0.0004	U	**0.0092**		0.00023	J	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.00087		0.0011		0.0004	U	0.0021		0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	5.5		19		57		47		15		56		7.7		1300		31	
IRON	0.3	*13*		*19*		*11*		*0.41*		*8.3*		*30*		*15*		*0.69*		*0.9*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	2.2		3.4		29		32		2.4		27		1.5		1.4		0.99	
MANGANESE	0.05	*0.2*	J	*0.16*	J	*15*		*7.6*		*0.4*		*17*		*0.15*		*0.32*		0.023	
NICKEL[2]	0.073	0.005	UJ	0.005	UJ	0.049		0.039		0.005	U	***0.17***		0.005	U	0.05		0.005	UJ
POTASSIUM	NS	1.3	J	12	J	5.1		4.5		26		4.7		2.3		12		27	J
SODIUM	NS	6.8		21		66		190		30		27		8.2		260		28	
ZINC	5	0.0097	J	0.01	J	0.29		0.18		0.02		0.54		0.02	U	0.02		0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.2	J	0.32	J	0.4	J	0.35	J	0.38	J	5	U	0.5	U	8.5	J	0.5	U
CHLORIDE	250	7.8		37		100		*340*		17		19		4.4		*1800*	J	4.4	
FLUORIDE	2	0.068	J	0.043	J	0.89	J	0.4	J	0.046	J	0.9	J	0.04	J	1	UJ	0.12	
SULFATE	250	1	UJ	19	J	*390*		*250*		14		*350*		13		*440*	J	13	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.03	J	0.05	U	0.05	U	1		0.05	U	0.088		0.05	U	0.036	J	0.05	U
NITROGEN, NITRITE	1	0.05	R	0.05	R	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ	0.35		0.05	UJ
NITROGEN, NITRATE-NITRITE	10	0.014	J	0.06	J	0.012	J	9.4		0.11		0.094		0.025	U	0.24	U	0.025	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	-0.454	U	2.31	J	14		1.06	U	0.522	U	7.58		0.908	U	19.6	U	0.793	U
GROSS BETA[4]	50	1.26	J	9.54		14.7		8.8		21.2		4.03		2.55	J	17.8	U	17.9	
RADIUM-226[5]	5	0.188	U	0.868	U	**1.85**		1.36		0.872	U	0.395	U	0.862	U	0.742	J	0.591	U
RADIUM-228[5]	5	0.333	U	0.723	U	**8.07**		3.6		1.1	U	1.42		0.46	U	0.988	J	0.315	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	30		45		5	U	5	U	110		44		5	U	760		85	
TOTAL DISSOLVED SOLIDS	500	76		150		*720*		*1000*		190		*530*		85		*8300*		160	
TOTAL SUSPENDED SOLIDS	NS	30	J	22	J	1	U	1	U	15		75		29		200		60	
Field Parameters																			
pH (S.U.)	6.5-8.5	**6.26**		6.74		**4.24**		**4.25**		7.18		**5.5**		**6.22**		**9.68**		**10.53**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.122		0.345		1.12		1.72		0.358		0.78		0.156		5.37		0.36	
TEMPERATURE (°C)	NS	18.01		15.05		15.04		16.25		14.44		16.96		13.97		17.65		13.64	
TURBIDITY (NTU)	NS	16.3		4.52		1.81		4.37		20.1		63.4		19.7		6.85		8.21	
DISSOLVED OXYGEN (mg/L)	NS	0		0		0		2.15		0		0		0		1.69		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-8		-65		277		380		-115		104		-3		-53		-119	

TABLE 3
FALL 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**14R**		**14R**		**16A**		**16A**		**18B**		**21D**		**21S**		**CSW-5**	
Sample Number:	**SMCL**	**14R-20181018**		**DUP-02-20181018**		**16A-20181025**		**DUP-04-20181025**		**18B-20181022**		**21D-20181024**		**21S-20181024**		**CSW-5-20181025**	
Date Sampled:	[1]	**10/18/2018**		**10/18/2018**		**10/25/2018**		**10/25/2018**		**10/22/2018**		**10/24/2018**		**10/24/2018**		**10/25/2018**	
Duplicate of:				**14R-20181018**				**16A-20181025**									
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*13*		*13*		0.024	J	0.038	J	0.018	J	*1.2*		*52*		*0.05*	J
ARSENIC	0.01	**0.011**		**0.011**		0.003	U	0.0016	J	0.003	U	0.003	U	0.0052		0.0026	J
BERYLLIUM	0.004	**0.006**		**0.0062**		0.0004	U	0.0004	U	0.0004	U	0.00032	J	**0.0075**		0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.00016	J	0.0004	U	0.0004	U	**0.0057**		0.00017	J
CALCIUM	NS	220		210		67		68		41		66		210		200	
IRON	0.3	*350*		*350*		*22*		*22*		*18*		*1.4*		*260*		*560*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	180		180		42		42		2		0.14	J	200		180	
MANGANESE	0.05	*180*		*170*		*25*		*24*		*0.13*		0.019	J	*170*	J	*150*	
NICKEL[2]	0.073	***0.64***		***0.63***		0.0057		0.0065		0.005	U	0.0032	J	***0.39***	J	***0.18***	
POTASSIUM	NS	19		19		11		11		4.5		40	J	12	J	15	
SODIUM	NS	330		330		40		41		11		82		360		310	
ZINC	5	1.7		1.7		0.011	J	0.055	J	0.02	U	0.02	U	1.1		0.18	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	2.5		2.5		5	UJ	5	UJ	0.23	J	0.52		5	U	2.2	J
CHLORIDE	250	*610*		*610*		28	J	28	J	16		38		*560*		*440*	J
FLUORIDE	2	0.74		0.68		1	UJ	1	UJ	0.067	J	0.26	J	0.61	J	0.1	UJ
SULFATE	250	*2800*		*2800*		*420*	J	*420*	J	1		28	J	*2900*	J	*3200*	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	0.05	U	0.05	U	0.041	J	0.05	U	0.05	U	0.05	U
NITROGEN, NITRITE	1	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	R	0.05	R	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.043	J	0.039	J	0.025	U	0.025	U	0.071		0.025	UJ	0.086	J	0.081	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	26.4	U	5.18	U	3.56	U	3.65	U	1.16	U	4.31		15.1	U	-2.08	U
GROSS BETA[4]	50	26.1	J	16.1	J	9.12		7.72		3.3	J	35.7		20.4		9.4	U
RADIUM-226[5]	5	**1.58**		**1.4**		0.564	U	0.391	U	0.525	U	0.815	U	**1.77**		0.605	J
RADIUM-228[5]	5	**10.5**		**10.8**		1.23		0.978	J	0.316	U	0.54	U	**10.1**		1.84	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	5	U	5	U	110	UJ	5	U	140		240		5	U	94	U
TOTAL DISSOLVED SOLIDS	500	*4900*		*5000*		*730*		*720*		210		450		*4600*		*4900*	
TOTAL SUSPENDED SOLIDS	NS	3.8		4.4		41		38		43		77	J	1	U	72	
Field Parameters																	
pH (S.U.)	6.5-8.5	**4.42**		NA		**5.95**		NA		6.98		**11.91**		**3.67**		**5.48**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	5.17		NA		1.13		NA		0.372		1.34		5.03		4.84	
TEMPERATURE (°C)	NS	15.14		NA		17.96		NA		17.07		13.76		13.15		14.56	
TURBIDITY (NTU)	NS	0.85		NA		19.2		NA		9.15		111		0.81		5.51	
DISSOLVED OXYGEN (mg/L)	NS	0		NA		0		NA		1.9		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	207		NA		35		NA		-144		-220		265		67	

TABLE 3
FALL 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-7**		**CSW-9**		**CSW-10**		**CSW-13**		**CSW-27**		**CSW-28**		**CSW-29**		**CSW-31**	
Sample Number:	**SMCL**	**CSW-7-20181024**		**CSW-9-20181023**		**CSW-10-20181017**		**CSW-13-20181019**		**CSW-27-20181029**		**CSW-28-20181026**		**CSW-29-20181017**		**CSW-31-20181016**	
Date Sampled:	(1)	**10/24/2018**		**10/23/2018**		**10/17/2018**		**10/19/2018**		**10/29/2018**		**10/26/2018**		**10/17/2018**		**10/16/2018**	
Duplicate of:																	
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.11*		*0.064*	J	*35*		*0.64*		*0.32*		*13*		0.022	J	*0.089*	J
ARSENIC	0.01	0.0038		0.0022	J	**0.011**		0.0029	J	0.0046		**0.012**		0.0081		0.003	U
BERYLLIUM	0.004	0.0027		**0.0081**		**0.023**		0.0018		0.0004	U	**0.007**		0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0027		0.0004	U	0.00026	J	0.0021		0.0004	U	0.0004	U
CALCIUM	NS	180		270		290		17		130		210		59		53	
IRON	0.3	*220*		*660*		*500*		*43*		*290*		*400*		*68*		*2.2*	
LEAD	0.015	0.0025	U	0.0025	U	0.0046		0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	140		210		240		9.3		130		230		41		0.33	
MANGANESE	0.05	*660*	J	*190*		*240*		*1.7*		*82*	J	*150*		*37*		0.03	
NICKEL[2]	0.073	***0.85***	J	***0.48***		***0.51***		0.033		0.069		***0.69***		0.022		0.0082	
POTASSIUM	NS	8.2	J	14		20		2.4		19	J	24		11		6.7	
SODIUM	NS	240		360		480		30		250		380		37		19	
ZINC	5	2.4		0.016	U	1.3		0.11		0.11		1		0.02	U	0.016	J
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	4.4	J	50	U	47	J	0.38	J	2	J	4.6	J	2.3	J	0.49	U
CHLORIDE	250	*500*		*630*		*690*		61		*380*	J	*700*	J	21		44	
FLUORIDE	2	1	U	*10*	U	*10*	U	0.083	J	0.2	UJ	1.2	J	1	U	0.059	J
SULFATE	250	*1800*	J	*2900*		*3300*		190		*1600*	J	*2700*	J	*300*		2.2	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.092		0.05	U
NITROGEN, NITRITE	1	0.05	R	0.05	U	0.05	UJ	0.05	UJ	0.05	U	0.10	U	0.05	UJ	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.077	J	0.08	UJ	0.042	U	0.01	J	0.066		0.023	J	0.12		0.025	U
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	3.3	U	6.01	U	**35.8**		2.69	U	4.51	U	3.09	U	0.154	U	2.35	J
GROSS BETA[4]	50	11.7		10.7	U	34.1		2.03	J	7.8	U	***571***		5.62		4.63	
RADIUM-226[5]	5	**1.87**		0.973	U	**1.8**		0.647	U	0.133	U	**2**		0.42	U	0.358	U
RADIUM-228[5]	5	**3.31**		0.861	J	**17.2**		0.254	U	0.484	U	**4.19**		0.361	U	0.451	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	5	U	5	U	5	U	33		47		10		210		110	
TOTAL DISSOLVED SOLIDS	500	*3500*		*5400*		*6100*		340		*2600*		*5400*		*670*		150	
TOTAL SUSPENDED SOLIDS	NS	94	J	54		23		8.1		51		66		43		15	
Field Parameters																	
pH (S.U.)	6.5-8.5	**5.3**		**5.54**		**3.98**		**5.4**		**5.47**		**5.2**		**6.23**		**11.6**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	5.04		5.38		6.4		0.531		3.45		5.76		1.15		0.687	
TEMPERATURE (°C)	NS	16.68		16.18		14.84		15.66		16.84		13.57		17.33		15.28	
TURBIDITY (NTU)	NS	16.5		1.6		17.9		1.15		19		44.5		5.17		4.29	
DISSOLVED OXYGEN (mg/L)	NS	0		0		0		0		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	97		43		226		54		68		44		-53		-298	

TABLE 3
FALL 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-31**		**CSW-32**		**CSW-33**		**CSW-33**		**CSW-34**		**CSW-35**		**CSW-36**		**CSW-37**	
Sample Number:	**SMCL**	**DUP-01-20181016**		**CSW-32-20181023**		**CSW-33-20181023**		**DUP-03-20181023**		**CSW-34-20181025**		**CSW-35-20181026**		**CSW-36-20181025**		**CSW-37-20181015**	
Date Sampled:	[1]	**10/16/2018**		**10/23/2018**		**10/23/2018**		**10/23/2018**		**10/25/2018**		**10/26/2018**		**10/25/2018**		**10/15/2018**	
Duplicate of:		**CSW-31-20181016**						**CSW-33-20181023**									
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.091*	J	0.023	J	*0.64*	J	*0.94*	J	*0.51*		*0.16*		*0.34*		*0.05*	U
ARSENIC	0.01	0.003	U	0.0065		0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	55		140		110		110		310		390		520		12	
IRON	0.3	*2.3*		*520*		*1.8*		*1.9*		*0.35*		0.19		0.088	J	*25*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	0.33		72		3.3		2.9		0.18	J	0.032	J	0.11	J	2.5	
MANGANESE	0.05	0.029		*12*		*0.48*		*0.39*		0.0076		0.0024	U	0.0095		*0.19*	
NICKEL[2]	0.073	0.0086		0.026		0.005		0.0048	J	0.019		0.024		0.021		0.005	U
POTASSIUM	NS	6.8		6		14		14		87		210		46		2.3	
SODIUM	NS	19		120		22		20		85		160		57		19	
ZINC	5	0.017	J	0.027	U	0.017	U	0.01	U	0.013	J	0.02	U	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.49	U	5	U	0.3	J	0.5	U	0.79	J	5	UJ	0.26	J	5	UJ
CHLORIDE	250	44		*250*		21		20		56	J	35	J	68	J	28	
FLUORIDE	2	0.057	J	1	U	0.089	J	0.095	J	0.1	UJ	1	UJ	0.1	UJ	1	U
SULFATE	250	2.1		*2100*		21		20		26	J	47	J	9	J	10	U
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	0.05	U	0.05	U	0.05		0.05	U	0.05	U	0.05	U
NITROGEN, NITRITE	1	0.05	U	0.05	U	0.05	U	0.05	U	0.15		0.05	U	0.05	U	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.091	UJ	0.025	UJ	0.025	UJ	0.12	U	0.023	J	0.014	U	0.025	UJ
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	0.0253	U	9.11	U	4.58		0.459	U	5.63	U	15	U	4.73	U	0.939	U
GROSS BETA[4]	50	5.71		7.58	U	10		7.93		***71.5***		***136***		31.6		2.86	J
RADIUM-226[5]	5	0.645	U	0.47	U	0.752	U	0.695	U	0.0567	U	1.17		1.55		0.784	U
RADIUM-228[5]	5	0.523	J	0.431	U	0.301	U	0.235	U	1.31		1.19		1.46		1.57	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	100		5	U	220		220		990		1500	J	1300		72	
TOTAL DISSOLVED SOLIDS	500	150		*3100*		300		300		*1200*		*1800*		*1500*		110	
TOTAL SUSPENDED SOLIDS	NS	17		88		83		98		7.3		7.9		2.1		8.6	
Field Parameters																	
pH (S.U.)	6.5-8.5	**NA**		**5.79**		**12.12**		**NA**		**12.66**		**12.76**		**12.6**		**5.92**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	NA		3.1		1.53		NA		5.05		6.83		5.75		0.278	
TEMPERATURE (°C)	NS	NA		17.7		13.51		NA		14.37		14.47		16.25		15.24	
TURBIDITY (NTU)	NS	NA		30		19		NA		10.9		5.16		1.88		7.3	
DISSOLVED OXYGEN (mg/L)	NS	NA		0		0		NA		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	NA		-12		-217		NA		-258		-301		-293		-9	

TABLE 3
FALL 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-38**		**CSW-39**		**PZ-1**		**PZ-2**		**PZ-3**		**PZ-4**		**PZ-5**	
Sample Number:	**SMCL**	**CSW-38-20181023**		**CSW-39-20181022**		**PZ-1-20181015**		**PZ-2-20181023**		**PZ-3-20181019**		**PZ-4-20181019**		**PZ-5-20181030**	
Date Sampled:	[1]	**10/23/2018**		**10/22/2018**		**10/15/2018**		**10/23/2018**		**10/19/2018**		**10/19/2018**		**10/30/2018**	
Duplicate of:															
TOTAL INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.58*		*9*		0.024	J	0.024	J	*16*	J	*2.2*	J	0.022	J*
ARSENIC	0.01	0.003	U	0.003	U	0.003	U	0.0053		0.0045		0.0039		0.0017	J*
BERYLLIUM	0.004	0.0004	U	0.00031	J	0.0004	U	0.0004	U	**0.0084**		**0.0053**		0.0004	U*
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0013		0.0004	U	0.0004	J*
CALCIUM	NS	220		40		250		11		150		190		50	*
IRON	0.3	*3*		*3.3*		*160*		*68*		*260*		*170*		*8.8*	*
LEAD	0.015	0.0025	U	0.0018	J	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U*
MAGNESIUM	NS	0.76		1.4		270		8.7		130		92		18	*
MANGANESE	0.05	0.039		0.048		*37*		*0.78*		*110*		*67*		*13*	*
NICKEL[2]	0.073	0.012		0.005		0.005	U	0.005	U	***0.33***	J	***0.14***	J	***0.082***	*
POTASSIUM	NS	10		37		32		1.2		13	J	7.6	J	6.6	*
SODIUM	NS	31		48		490		50		250		140		22	*
ZINC	5	0.02	U	0.02	U	0.02	U	0.02	U	0.65		0.059		0.16	*
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.65		0.36	J	6.1	J	1	U	1.8		3.6		0.35	J
CHLORIDE	250	69		42		*780*		26		*320*		230		22	
FLUORIDE	2	0.095	J	0.11		*2.5*	U	0.2	U	0.42		0.55		0.1	U
SULFATE	250	32		7.3		*1300*		85		*3500*		*1500*		190	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE	10	0.05	U	0.05	U	0.25	U	0.5	U	0.05	U	0.05	U	0.24	
NITROGEN, NITRITE	1	0.05	U	0.05	U	0.25	U	0.50	U	0.05	UJ	0.05	UJ	0.05	U
NITROGEN, NITRATE-NITRITE	10	0.025	UJ	0.025	U	0.02	J	0.025	UJ	0.04	J	0.028	J	0.18	*
RADIOCHEMISTRY		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	-1.37	U	4.62		4.4	U	0.493	U	4.97	U	0.711	U	0	U
GROSS BETA[4]	50	2.8	U	37		10.2	U	1.47	U	11.3		0.328	U	6.88	
RADIUM-226[5]	5	0.293	U	0.82	U	0.503	U	0.875	U	0.742	U	0.964	U	0.644	J
RADIUM-228[5]	5	0.334	U	0.608	J	1.83		0.735	J	1.96		1.31		1.38	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	500		120		670		88		5	U	59		82	*
TOTAL DISSOLVED SOLIDS	500	*780*		260		*3600*		300		*3200*		*2300*		440	
TOTAL SUSPENDED SOLIDS	NS	23		150		48		110		4.4		19		10	
Field Parameters															
pH (S.U.)	6.5-8.5	**12.43**		**11.6**		**6.16**		6.85		**4.55**		**5.72**		**6.12**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	2.79		0.879		5.1		0.593		3.42		2.82		0.655	
TEMPERATURE (°C)	NS	15.61		14.44		16.85		17.15		16.14		16.12		16.89	
TURBIDITY (NTU)	NS	7.5		122		7.2		7.33		9.96		6.9		3.77	
DISSOLVED OXYGEN (mg/L)	NS	0		0		0.03		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-247		-198		-79		-145		155		11		-3	

TABLE 3
FALL 2018 GROUNDWATER SAMPLING RESULTS
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Limit of Quantitation (LOQ).
R -- Value is rejected due to gross exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.
NS -- Not Specified

(1)MCL = Maximum Contaminant Level National Primary and Secondary Drinking Water Regulations, August 2009.
(2)The Nickel screening level is the Maryland Department of the Environment (MDE) Groundwater Cleanup Standard.
(3)Some non-detect results for Gross Alpha were greater than the screening level
(4)The Gross Beta screening value is 4 millirems per year which cannot be applied to the value reported for Gross Beta in pCi/L, therefore guidance purposes, the Gross Beta results will be compared with the 50 pCi/L screening level provided in the Code of Federal Regulations (CFR) and Code of Maryland Regulations (COMAR) sampling and analysis requirements.
(5)MCL is for Ra-226 and Ra-228 combined.
Bold values exceed the EPA MCL
Italicized values exceed the EPA secondary standard
Bold, italicized values exceed the MDE standard or COMAR standard.

* The asterisked results for samples PZ-5-20181030 were interchanged with RB-20181030 (not shown). The samples for metals, total-nitrate/nitrite, radium-226, radium-228, and alkalinity reported by the laboratory are suspected to have been switched during the sample handling, shipping, or analysis procedures.

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	7A				7B			
Sample Number:	SMCL	7A-20170711	7A-20171012	7A-20180508	7A-20181024	7B-20170711	7B-20171012	7B-20180508	7B-20181024
Date Sampled:	(1)	7/11/2017	10/12/2017	5/8/2018	10/24/2018	7/11/2017	10/12/2017	5/8/2018	10/24/2018
Duplicate of:									
INORGANICS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ALUMINUM	0.05	*0.82*	0.046 J	*0.08* J	*0.066* J	*0.28*	0.019 J	0.031 J	*0.05* U
ARSENIC	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
BERYLLIUM	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CADMIUM	0.005	0.0004 U	0.00047 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CALCIUM	NS	5.2	5	5.1	5.5	25	21	19	19
IRON	0.3	*15*	*12*	*13*	*13*	*22*	*21*	*18*	*19*
LEAD	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
MAGNESIUM	NS	2.2	1.9	2.2	2.2	3.7	3.3	3.2	3.4
MANGANESE	0.05	*0.2*	*0.2*	*0.52*	*0.2* J	*0.2*	*0.17*	*0.16*	*0.16* J
NICKEL[2]	0.073	0.0024 J	0.0031 J	0.0049 J	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 UJ
POTASSIUM	NS	1.2	1.1	0.98 J	1.3 J	8.7	8.4	11	12 J
SODIUM	NS	10	6.3	6.4	6.8	21	20	20	21
ZINC	5	0.02 U	0.02 U	0.02 U	0.0097 J	0.02	0.02 U	0.02 U	0.01 J
ANIONS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BROMIDE	NS	0.5 U	0.1 U	0.37 J	0.2 J	0.24 J	0.14 J	0.44 J	0.32 J
CHLORIDE	250	13	7.9	8.9	7.8	37	37	38	37
FLUORIDE	2	0.085 J	0.058 J	0.1	0.068 J	0.07 J	0.04 J	0.093 J	0.043 J
NITRATE	NS	1.8	0.24	NA	NA	0.05 U	0.12	NA	NA
NITRITE	NS	0.05 U	0.01 U	NA	NA	0.05 U	0.01 U	NA	NA
SULFATE	250	2.3	0.59	1.6	1 UJ	22	22	24	19 J
NITROGEN		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
NITROGEN, NITRATE-NITRITE	10	1.5	0.31	0.45	0.014 J	0.025 U	0.025 U	0.025 U	0.06 J
NITROGEN, NITRATE (TO9 calculated)	1	0.4	0.05	0.93	0.03 J	ND	0.027	0.05 U	0.05 U
NITROGEN, NITRITE (TO9 calculated)	10	ND	ND	0.05 U	0.05 R	ND	ND	0.05 U	0.05 R
RADIONUCLIDES		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
GROSS ALPHA[3]	15	0.856 U	1.45 U	0.288 U	-0.454 U	2.54 J	1.28 U	1.94 J	2.31 J
GROSS BETA[4]	50	0.915 U	1.5 U	1.67 J	1.26 J	7.62	7.5	11.4	9.54
RADIUM-226[5]	5	0.188 U	0.0293 U	0.155 J	0.188 U	0.894 U	0.826 J	0.754 J	0.868 U
RADIUM-228[5]	5	0.28 U	0.549 J	0.171 U	0.333 U	0.95 J	0.924 J	1.02	0.723 U
MISCELLANEOUS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ALKALINITY, TOTAL	NS	51 U	45	21	30	710	45	44	45
TOTAL DISSOLVED SOLIDS	500	140	93	83	76	180	180	160	150
TOTAL SUSPENDED SOLIDS	NS	34	27	53	30 J	40	22	27	22 J
FIELD PARAMETERS									
pH (S.U.)	6.5-8.5	**6.29**	**5.49**	**6.14**	**6.26**	**2.17**	**6.02**	**6.15**	6.74
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.166	0.131	0.118	0.122	0.129	0.348	0.356	0.345
TEMPERATURE (°c)	NS	20.84	20.01	24.04	18.01	17.73	15.12	15.47	15.05
TURBIDITY (NTU)	NS	19.1	13.9	7.62	16.3	9.18	2.58	2.04	4.52
DISSOLVED OXYGEN (mg/L)	NS	0	0	0	0	0.06	0.7	1.97	0
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-42	-15	-26	-8	107	-75	-140	-65

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**8A**				**8B**			
Sample Number:	**SMCL**	**8A-20170713**	**8A-20171012**	**8A-20180508**	**8A-20181018**	**8B-20170713**	**8B-20171012**	**8B-20180508**	**8B-20181018**
Date Sampled:	[1]	**7/13/2017**	**10/12/2017**	**5/8/2018**	**10/18/2018**	**7/13/2017**	**10/12/2017**	**5/8/2018**	**10/18/2018**
Duplicate of:									
INORGANICS		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
ALUMINUM	0.05	*2.7*	*2.5*	*2.3*	*1.8*	*1.6*	*1.6*	*1.5*	*1.5*
ARSENIC	0.01	0.0054	**0.01**	0.004	0.0042	0.0021 J	0.0033	0.0015 J	0.002 J
BERYLLIUM	0.004	0.0026	0.0029	0.0024	0.0017	0.0029	0.003	0.0025	0.0026
CADMIUM	0.005	0.0023	0.0009	0.00056	0.00087	0.0015	0.001	0.00078	0.0011
CALCIUM	NS	74 J	75	63	57	56 J	53	50	47
IRON	0.3	*16*	*15*	*13*	*11*	0.076 U	0.23	0.055 J	*0.41*
LEAD	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
MAGNESIUM	NS	38	37	33	29	36	35	34	32
MANGANESE	0.05	*19* J	*21*	*19*	*15*	*8.8* J	*8.8*	*7.8*	*7.6*
NICKEL[2]	0.073	0.058	0.057	0.052	0.049	0.043	0.044	0.041	0.039
POTASSIUM	NS	5.7	6.1	5.5	5.1	4.4	4.7	4.8	4.5
SODIUM	NS	90 J	86	74	66	170 J	190	190	190
ZINC	5	0.4	0.36	0.33	0.29	0.21	0.19	0.2	0.18
ANIONS		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
BROMIDE	NS	0.42 J	0.41	0.76	0.4 J	0.32 J	0.26	0.63	0.35 J
CHLORIDE	250	120 J	110	98	100	*300*	*310*	*300*	*340*
FLUORIDE	2	0.94	0.96	1	0.89 J	0.39	0.33	0.47	0.4 J
NITRATE	NS	0.05 U	0.013 J	NA	NA	8	8.9	NA	NA
NITRITE	NS	0.05 U	0.2 U	NA	NA	0.05 U	0.2 U	NA	NA
SULFATE	250	*560* J	*430*	*430*	*390*	*290* J	*250*	*270*	*250*
NITROGEN		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
NITROGEN, NITRATE-NITRITE	10	0.025 U	0.025 U	0.025 U	0.012 J	6.3	**10**	7.8	9.4
NITROGEN, NITRATE (TO9 calculated)	1	ND	0.0029 J	0.05 U	0.05 U	**1.8**	**2.0**	**9**	**1**
NITROGEN, NITRITE (TO9 calculated)	10	ND	ND	0.05 U	0.05 U	ND	ND	0.05 U	0.05 U
RADIONUCLIDES		**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**
GROSS ALPHA[3]	15	10.9	10	13.4	14	2.91 U	5.1	7.27	1.06 U
GROSS BETA[4]	50	21.1	15.6	16.1	14.7	11.1	7.72	9.68	8.8
RADIUM-226[5]	5	**1.94**	**1.76**	**1.69**	**1.85**	0.801 U	**1.28**	**1.2**	1.36
RADIUM-228[5]	5	**9.59**	**9.57**	**9.15**	**8.07**	3.42	**4.06**	**4.39**	3.6
MISCELLANEOUS		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
ALKALINITY, TOTAL	NS	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TOTAL DISSOLVED SOLIDS	500	*920*	*880*	*850*	*720*	*890*	*990*	*1000*	*1000*
TOTAL SUSPENDED SOLIDS	NS	8.2	1.8	1 U	1 U	1 U	1 U	1 U	1 U
FIELD PARAMETERS									
pH (S.U.)	6.5-8.5	**4**	**3.9**	**3.86**	**4.24**	**4.09**	**3.97**	**4.19**	**4.25**
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.561	1.26	1.19	1.12	1.57	1.69	1.56	1.72
TEMPERATURE (°c)	NS	18.14	15.44	16.18	15.04	19.84	17.55	19.21	16.25
TURBIDITY (NTU)	NS	3.43	0.87	1.2	1.81	1.4	3.54	1.85	4.37
DISSOLVED OXYGEN (mg/L)	NS	1.35	0.96	0.3	0	0.15	0.54	1.68	2.15
OXIDATION-REDUCTION POTENTIAL (mV)	NS	217	288	244	277	396	220	380	380

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	11A												11C							
Sample Number:	SMCL	11A-20170706		DUP-02-20170706		11A-20171010		DUP-03-20171010		11A-20180430		11A-20181017		11C-20170706		11C-20171009		11C-20180501		11C-20181016	
Date Sampled:	[1]	7/6/2017		7/6/2017		10/10/2017		10/10/2017		4/30/2018		10/17/2018		7/6/2017		10/9/2017		5/1/2018		10/16/2018	
Duplicate of:				11A-20170706				11A-20171010													
INORGANICS		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
ALUMINUM	0.05	*0.26*		*0.26*		0.036	UJ	0.024	UJ	0.019	J	*0.055*	J	*5.7*		*4*		*6*		*17*	J
ARSENIC	0.01	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.0024	J	0.003	U	0.0036	
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0027		0.0014		0.0022		**0.0092**	
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0002	J	0.00017	J	0.0032		0.0021	
CALCIUM	NS	15		16		17	J	16	J	16		15		31		37		21		56	
IRON	0.3	*8.9*		*8.8*		*5.9*	J	*5.8*	J	*6*		*8.3*		*32*		*39*		*19*		*30*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	2.5		2.6		2.6	J	2.5	J	2.2		2.4		22		27		17		27	
MANGANESE	0.05	*0.15*		*0.16*		*0.19*	J	*0.17*	J	*0.11*		*0.4*		*12*		*16*		*8.6*		*17*	
NICKEL[2]	0.073	0.005	U	0.005	U	0.005	UJ	0.005	UJ	0.005	U	0.005	U	0.062		0.044		0.057		***0.17***	
POTASSIUM	NS	28		29	J	30		30		29		26		4.4		4.8		3.4		4.7	
SODIUM	NS	34		34	J	33	J	33	J	33		30		27		34		21		27	
ZINC	5	0.045		0.041		0.02	UJ	0.02	UJ	0.02	U	0.02		0.16		0.11		0.26		0.54	
ANIONS		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
BROMIDE	NS	0.5	U	0.5	U	0.066	J	0.064	J	0.22	J	0.38	J	0.26	J	0.24	J	0.27	J	5	U
CHLORIDE	250	17		17		17		17		17		17		20		31		18	J	19	
FLUORIDE	2	0.086	J	0.083	J	0.063	J	0.058	J	0.085	J	0.046	J	0.29		0.44		0.27	J	0.9	J
NITRATE	NS	0.05	U	0.05	U	0.0075	UJ	0.022	UJ	NA		NA		0.036	J	0.027		NA		NA	
NITRITE	NS	0.05	U	0.05	U	0.01	UJ	0.01	UJ	NA		NA		0.024	J	0.01	U	NA		NA	
SULFATE	250	12		12		14		14		14		14		120		110		110		*350*	
NITROGEN		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
NITROGEN, NITRATE-NITRITE	10	0.14	J	0.025	U	0.025	U	0.025	U	0.025	U	0.11		0.051	UJ	0.044	J	1.2		0.094	
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		ND		ND		0.05	U	0.05	U	0.0081	J	0.0061		**1.5**		0.088	
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		ND		ND		0.05	U	0.05	UJ	0.0073	J	ND		0.05	U	0.05	U
RADIONUCLIDES		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
GROSS ALPHA[3]	15	0.47	U	1.55	U	2.22	J	2.7	J	0.333	U	0.522	U	5.47		0.427	U	2.79		7.58	
GROSS BETA[4]	50	19.7		21.1		26.1		25.9		25.9		21.2		5.75	U	2.51	J	4.66		4.03	
RADIUM-226[5]	5	0.653	J	0.699	J	0.96	J	0.862	J	0.769	J	0.872	U	0.115	U	0.123	J	0.082	U	0.395	U
RADIUM-228[5]	5	0.488	J	0.288	U	0.576	J	0.807	J	0.503	J	1.1	U	0.936	J	0.961	J	0.589		1.42	
MISCELLANEOUS		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	J	mg/L	
ALKALINITY, TOTAL	NS	100		120		110		110		120		110		69		200		83		44	
TOTAL DISSOLVED SOLIDS	500	130		130		200		240		190		190		360		450		350		*530*	
TOTAL SUSPENDED SOLIDS	NS	26		24		12		13		11		15		71		62		13		75	
FIELD PARAMETERS																					
pH (S.U.)	6.5-8.5	7.08		NA		7.1		NA		7.14		7.18		**5.87**		**6.22**		**5.73**		**5.5**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.31		NA		0.392		NA		0.404		0.358		0.225		0.782		0.426		0.78	
TEMPERATURE (°c)	NS	15.51		NA		16.65		NA		14.56		14.44		17.56		23.37		17.04		16.96	
TURBIDITY (NTU)	NS	30		NA		5.99		NA		9.83		20.1		24.8		19.8		19.8		63.4	
DISSOLVED OXYGEN (mg/L)	NS	0		NA		0		NA		0		0		0		0		1.42		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-69		NA		-175		NA		-125		-115		-53		-91		4		104	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**11R**								**12R**							
Sample Number:	**SMCL**	**11R-20170706**		**11R-20171009**		**11R-20180430**		**11R-20181017**		**12R-20170711**		**12R-20171016**		**12R-20180509**		**12R-20181025**	
Date Sampled:	[1]	**7/6/2017**		**10/9/2017**		**4/30/2018**		**10/17/2018**		**7/11/2017**		**10/16/2017**		**5/9/2018**		**10/25/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	0.044	J	0.044	J	0.039	J	*0.18*		*0.17*		*0.12*		*0.14*		*0.09*	J
ARSENIC	0.01	0.003	U	0.003	U	0.003	U	0.003	U	0.0017	J	0.0021	J	0.0022	J	0.0017	J
BERYLLIUM	0.004	0.00027	J	0.00035	J	0.0004	U	0.00023	J	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	9		8.5		8.8		7.7		1000		1500		1500		1300	
IRON	0.3	*19*		*19*		*18*		*15*		*0.96*		*0.66*		*0.99*		*0.69*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	1.7		1.6		1.7		1.5		0.58		0.36		1.6		1.4	
MANGANESE	0.05	*0.14*		*0.13*		*0.13*		*0.15*		*0.14*		*0.11*		*0.39*		*0.32*	
NICKEL[2]	0.073	0.005	U	0.005	U	0.005	U	0.005	U	0.045		0.057		0.05		0.05	
POTASSIUM	NS	1.9		2		2.3		2.3		13		12		11		12	
SODIUM	NS	9.6		9		9.7		8.2		410		290		240		260	
ZINC	5	0.01	J	0.02	U	0.02	U	0.02	U	0.022		0.011	J	0.013	J	0.02	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.5	U	0.1	U	0.5	U	0.5	U	12		12		11		8.5	J
CHLORIDE	250	4.1		5		4.4		4.4		*2600*		*2300*		*2200*		*1800*	J
FLUORIDE	2	0.079	J	0.052	J	0.082	J	0.04	J	1	U	0.06	UJ	1	U	1	UJ
NITRATE	NS	0.05	U	0.01	U	NA		NA		0.045	J	0.0093	J	NA		NA	
NITRITE	NS	0.05	U	0.01	U	NA		NA		0.05	U	2	UJ	NA		NA	
SULFATE	250	12		13		27		13		190		*250*		*260*		*440*	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.014	UJ	0.025	U	0.025	U	0.025	U	0.095		0.013	J	0.1		0.24	U
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		0.05	U	0.05	U	0.010	J	0.0021	J	0.037	J	0.036	J
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	UJ	ND		ND		0.05	U	0.35	
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	1.14	U	1.43	J	2.97	J	0.908	U	15.5	U	12.4	U	1.98	U	19.6	U
GROSS BETA[4]	50	2.66	U	2.14	J	4.22		2.55	J	2.01	U	7.7	U	21.6	U	17.8	U
RADIUM-226[5]	5	0.775	J	0.812	J	0.912	J	0.862	U	2.25		0.913	J	0.48	J	0.742	J
RADIUM-228[5]	5	0.489	J	1.08		0.3	U	0.46	U	1.53		1.58	U	0.799	J	0.988	J
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	29		36		58		5	U	5	U	580		820		760	
TOTAL DISSOLVED SOLIDS	500	59		83		92	U	85		*11000*		*11000*		*10000*		*8300*	
TOTAL SUSPENDED SOLIDS	NS	26		33		4.9		29		32		19		45		200	
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**6.16**		**5.85**		**6.09**		**6.22**		**13.18**		**12.87**		**11.66**		**9.68**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.151		0.152		0.189		0.156		7.17		10.7		6.12		5.37	
TEMPERATURE (°c)	NS	18.38		16.42		15.33		13.97		24.84		17.26		19.52		17.65	
TURBIDITY (NTU)	NS	10.8		26		1.14		19.7		6.51		6.93		5.58		6.85	
DISSOLVED OXYGEN (mg/L)	NS	0		0.88		0		0		0		1.94		0		1.69	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	1		-19		-22		-3		-80		23		-195		-53	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	13A				14R				
Sample Number:	SMCL	13A-20170630	13A-20171003	13A-20180502	13A-20181019	14R-20170630	14R-20171010	14R-20180504	14R-20181018	DUP-02-20181018
Date Sampled:	[1]	6/30/2017	10/3/2017	5/2/2018	10/19/2018	6/30/2017	10/10/2017	5/4/2018	10/18/2018	10/18/2018
Duplicate of:										14R-20181018
INORGANICS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ALUMINUM	0.05	*7.3*	*0.37*	*1.5*	*0.23* J	*18*	*15*	*15* J	*13*	*13*
ARSENIC	0.01	0.0018 J	0.003 U	0.003 U	0.003 U	**0.013**	**0.012**	**0.015**	**0.011**	**0.011**
BERYLLIUM	0.004	0.00066	0.0004 U	0.0004 U	0.0004 U	**0.0078**	**0.0069**	**0.0075**	**0.006**	**0.0062**
CADMIUM	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	**0.02** U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CALCIUM	NS	23	23	26	31	270	220 J	240	220	210
IRON	0.3	*3.8*	*1.5*	*1.2*	*0.9*	*420*	*360* J	*390*	*350*	*350*
LEAD	0.015	0.0083	0.0022 J	0.0013 J	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
MAGNESIUM	NS	2.1	1.2	1	0.99	230	210 J	210	180	180
MANGANESE	0.05	0.039	0.026	0.022 U	0.023	*230*	*190* J	*200*	*180*	*170*
NICKEL[2]	0.073	0.022	0.0027 J	0.0028 J	0.005 UJ	***0.9***	***0.7*** J	***0.77***	***0.64***	***0.63***
POTASSIUM	NS	33	29	27	27 J	24	22	22	19	19
SODIUM	NS	32	29	28	28	440	390 J	400	330	330
ZINC	5	0.035	0.02 U	0.02 U	0.02 U	2.2	1.8 J	1.9	1.7	1.7
ANIONS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BROMIDE	NS	0.5 U	0.1 U	0.5 U	0.5 U	4.6 J	2.6	4.4 J	2.5	2.5
CHLORIDE	250	3	3.6	3.8	4.4	*680*	*620*	*650*	*610*	*610*
FLUORIDE	2	0.16	0.15	0.14	0.12	1.3 J	0.17	1.1 J	0.74	0.68
NITRATE	NS	0.05 U	0.0071 J	NA	NA	0.05 U	0.057 U	NA	NA	NA
NITRITE	NS	0.05 U	0.01 U	NA	NA	0.05 U	0.2 UJ	NA	NA	NA
SULFATE	250	13	13	50	13	*3600*	*2600*	*3000*	*2800*	*2800*
NITROGEN		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
NITROGEN, NITRATE-NITRITE	10	0.025 U	0.025 U	0.025 U	0.025 U	0.067 U	0.025 U	0.025 UJ	0.043 J	0.039 J
NITROGEN, NITRATE (TO9 calculated)	1	ND	0.0016 J	0.05 U	0.05 U	ND	ND	0.05 U	0.05 U	0.05 U
NITROGEN, NITRITE (TO9 calculated)	10	ND	ND	0.05 U	0.05 UJ	ND	ND	0.05 UJ	0.05 U	0.05 U
RADIONUCLIDES		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
GROSS ALPHA[3]	15	4.6	3.93	0.918 U	0.793 U	**44.4**	23.4 U	31.4 U	26.4 U	5.18 U
GROSS BETA[4]	50	27.1	27.3	22.8	17.9	34.6	30.5	32.7	26.1 J	16.1 J
RADIUM-226[5]	5	0.578 J	0.427 J	0.394 J	0.591 U	**1.3**	**1.69**	**1.74**	**1.58**	**1.4**
RADIUM-228[5]	5	0.663 J	1.15	0.132 U	0.315 U	**10.4**	**9.61**	**12**	**10.5**	**10.8**
MISCELLANEOUS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ALKALINITY, TOTAL	NS	110	90	74	85	5 U	5 U	5 U	5 U	5 U
TOTAL DISSOLVED SOLIDS	500	260	230	250	160	*5500*	*5300*	*5100*	*4900*	*5000*
TOTAL SUSPENDED SOLIDS	NS	86	69	25	60	9.1	10	6.7	3.8	4.4
FIELD PARAMETERS										
pH (S.U.)	6.5-8.5	**10.41**	**10.26**	**10.42**	**10.53**	**4.42**	**4.37**	**4.03**	**4.42**	**NA**
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.103	0.325	0.367	0.36	5.57	5.19	5.18	5.17	NA
TEMPERATURE (°c)	NS	21.26	14.51	16.98	13.64	18.87	16.54	17.36	15.14	NA
TURBIDITY (NTU)	NS	135	63.7	17.8	8.21	1.58	1.4	3.13	0.85	NA
DISSOLVED OXYGEN (mg/L)	NS	0	0.67	0.38	0	0	0.73	0.21	0	NA
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-109	-84	-211	-119	150	202	134	207	NA

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	16A					18B				
Sample Number:	SMCL	16A-20170713	16A-20171013	16A-20180507	16A-20181025	DUP-04-20181025	18B-20170712	18B-20171017	18B-20180507	DUP-03-20180507	18B-20181022
Date Sampled:	[1]	7/13/2017	10/13/2017	5/7/2018	10/25/2018	10/25/2018	7/12/2017	10/17/2017	5/7/2018	5/7/2018	10/22/2018
Duplicate of:						16A-20181025				18B-20180507	
INORGANICS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ALUMINUM	0.05	0.031 J	*0.05* U	0.026 J	0.024 J	0.038 J	0.036 J	*0.05* U	*0.05* U	0.018 J	0.018 J
ARSENIC	0.01	0.003 U	0.0019 J	0.003 U	0.003 U	0.0016 J	0.003 U	0.002 J	0.0015 J	0.0015 J	0.003 U
BERYLLIUM	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CADMIUM	0.005	0.0004 U	0.0004 U	0.00022 J	0.0004 U	0.00016 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CALCIUM	NS	86 J	82 J	64	67	68	51	46	44	45	41
IRON	0.3	*31*	*27* J	*20*	*22*	*22*	*24*	*19*	*19*	*20*	*18*
LEAD	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
MAGNESIUM	NS	54	49 J	42	42	42	2.7	2.2	2.4	2.4	2
MANGANESE	0.05	*29* J	*32* J	*26*	*25*	*24*	*0.17*	*0.16*	*0.15*	*0.15*	*0.13*
NICKEL[2]	0.073	0.0065	0.0061	0.0066	0.0057	0.0065	0.004 J	0.005 U	0.005 U	0.005 U	0.005 U
POTASSIUM	NS	11	12	10	11	11	4.9	5.1	2.9	3	4.5
SODIUM	NS	52 J	49 J	38	40	41	14	13	8.2	8.3	11
ZINC	5	0.011 J	0.02 U	0.0099 J	0.011 J	0.055 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
ANIONS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BROMIDE	NS	0.44 J	0.48	0.5 U	5 UJ	5 UJ	0.22 J	0.11 J	0.22 J	0.22 J	0.23 J
CHLORIDE	250	31	31	25	28 J	28 J	15	15	8.5	8.4	16
FLUORIDE	2	0.1 U	0.066 J	0.1 U	1 UJ	1 UJ	0.089 J	0.04 J	0.07 J	0.071 J	0.067 J
NITRATE	NS	0.05 U	0.078	NA	NA	NA	0.05 U	0.012 J	NA	NA	NA
NITRITE	NS	0.05 U	0.01 UJ	NA	NA	NA	0.05 U	0.01 UJ	NA	NA	NA
SULFATE	250	*510* J	*460*	*440*	*420* J	*420* J	0.53 J	0.88 U	0.97 J	0.99 J	1
NITROGEN		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
NITROGEN, NITRATE-NITRITE	10	0.057	0.025 U	0.032 J	0.025 U	0.025 U	0.025 U	0.025 UJ	0.025 U	0.025 U	0.071
NITROGEN, NITRATE (TO9 calculated)	1	ND	0.018	0.072	0.05 U	0.05 U	ND	0.0027 J	0.03 J	0.031 J	0.041 J
NITROGEN, NITRITE (TO9 calculated)	10	ND	ND	0.05 U	0.05 U	0.05 U	ND	ND	0.05 U	0.05 U	0.05 U
RADIONUCLIDES		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
GROSS ALPHA[3]	15	-1.35 U	0.878 U	6.03	3.56 U	3.65 U	0.363 U	0.106 U	0.827 U	2.64 J	1.16 U
GROSS BETA[4]	50	9.31	10.8	6.5	9.12	7.72	8.61	2.76 J	2.2 J	2.06 J	3.3 J
RADIUM-226[5]	5	0.227 U	0.343 J	0.345 U	0.564 U	0.391 U	0.62 J	0.316 J	0.42 J	0.534 J	0.525 U
RADIUM-228[5]	5	1.14 U	1.33	0.622 J	1.23	0.978 J	1.19	0.472 U	0.374 J	0.567 J	0.316 U
MISCELLANEOUS		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ALKALINITY, TOTAL	NS	110	120	64	110 UJ	5 U	150	140	160 J	89 J	140
TOTAL DISSOLVED SOLIDS	500	*890*	*830*	*770*	*730*	*720*	190 U	200 J	190	250	210
TOTAL SUSPENDED SOLIDS	NS	49	5.2	12	41	38	55	41	47	47	43
FIELD PARAMETERS											
pH (S.U.)	6.5-8.5	**6**	**5.82**	**5.93**	**5.95**	**NA**	7.24	6.98	6.78	**NA**	6.98
SPECIFIC CONDUCTIVITY (mS/cm)	NS	1.14	1.24	1.04	1.13	NA	0.335	0.415	0.406	NA	0.372
TEMPERATURE (°c)	NS	21.74	18.2	21.53	17.96	NA	24.21	13.6	17.97	NA	17.07
TURBIDITY (NTU)	NS	7.83	5.43	9.95	19.2	NA	29.9	14.3	3.03	NA	9.15
DISSOLVED OXYGEN (mg/L)	NS	0	0	0	0	NA	0	0	0	NA	1.9
OXIDATION-REDUCTION POTENTIAL (mV)	NS	37	-6	47	35	NA	-111	-162	-133	NA	-144

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**21D**								**21S**							
Sample Number:	**SMCL**	**21D-20170710**		**21D-20171004**		**21D-20180502**		**21D-20181024**		**21S-20170710**		**21S-20171004**		**21S-20180502**		**21S-20181024**	
Date Sampled:	**(1)**	**7/10/2017**		**10/4/2017**		**5/2/2018**		**10/24/2018**		**7/10/2017**		**10/4/2017**		**5/2/2018**		**10/24/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*18*		*0.29*	J	*0.55*		*1.2*		*55*		*40*	J	*50*		*52*	
ARSENIC	0.01	0.0016	J	0.003	U	0.003	U	0.003	U	0.0063		0.0065		**0.017**		0.0052	
BERYLLIUM	0.004	**0.0094**		0.0012		0.00074		0.00032	J	**0.0068**		**0.0073**		**0.0068**		**0.0075**	
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	**0.0079**		0.0038		0.004		**0.0057**	
CALCIUM	NS	26		19	J	52		66		210		170	J	210		210	
IRON	0.3	*12*		*3.7*	J	*1.7*		*1.4*		*290*		*290*	J	*270*		*260*	
LEAD	0.015	**0.016**		0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	1.3		0.51	J	0.24	J	0.14	J	190		160	J	200		200	
MANGANESE	0.05	*0.12*		*0.093*	J	0.047		0.019	J	*170*		*170*	J	*170*		*170*	J
NICKEL[2]	0.073	0.02		0.0027	J	0.005	U	0.0032	J	***0.37***		***0.39***	J	***0.4***		***0.39***	J
POTASSIUM	NS	37		26		40		40	J	11		9.3		12		12	J
SODIUM	NS	60		47	J	80		82		360		290	J	360		360	
ZINC	5	0.024		0.02	U	0.02	U	0.02	U	1.1		1	J	1.1		1.1	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.5	U	0.1	U	0.5	U	0.52		2.6		2.6		2.8		5	U
CHLORIDE	250	11		8		27		38		*610*		*610*		*500*		*560*	
FLUORIDE	2	0.22		0.18	J	0.2		0.26	J	*2.5*	U	0.084	J	0.24		0.61	J
NITRATE	NS	0.1	U	0.0095	J	NA		NA		0.05	U	0.01	U	NA		NA	
NITRITE	NS	0.1	U	0.01	UJ	NA		NA		0.05	U	0.2	UJ	NA		NA	
SULFATE	250	15		14		28		28	J	1	U	*2500*		*3400*		*2900*	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.025	UJ	0.025	U	0.025	U	0.025	UJ	0.025	UJ	0.025	U	0.025	U	0.086	J
NITROGEN, NITRATE (TO9 calculated)	1	ND		0.0021	J	0.05	U	0.05	U	ND		ND		0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	R	ND		ND		0.05	U	0.05	R
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	**61.1**		4.08		5.01		4.31		1.46	U	10	U	2.14	U	**15.1**	U
GROSS BETA[4]	50	***93.1***		28.4		32.3		35.7		1.42	U	41.4		14.3	U	20.4	
RADIUM-226[5]	5	1.44	U	0.591	J	0.546	J	0.815	U	0.208	U	**1.44**		**1.58**		**1.77**	
RADIUM-228[5]	5	1.4		0.225	U	0.213	U	0.54	U	-0.486	U	**10.2**		**9.55**		**10.1**	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	180		150		110		240		5	U	5	U	5	U	5	U
TOTAL DISSOLVED SOLIDS	500	*1100*	J	450		420		450		*4700*	J	*5700*		*4600*		*4600*	
TOTAL SUSPENDED SOLIDS	NS	200		230		80		77	J	5.6		2.5		1.1		1	U
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**10.68**		**10.68**		**11.26**		**11.91**		**3.34**		**3.49**		**3.86**		**3.67**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.17		0.415		1.07		1.34		4.6		4.93		4.59		5.03	
TEMPERATURE (°c)	NS	18.99		13.93		14.84		13.76		19.87		17.98		20.22		13.15	
TURBIDITY (NTU)	NS	>1000		535		121		111		2.98		2.85		1		0.81	
DISSOLVED OXYGEN (mg/L)	NS	0		0.44		0.65		0		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-53		-159		-300		-220		299		236		277		265	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-5**											
Sample Number:	**SMCL**	**CSW-5-20170712**		**DUP-03-20170712**		**CSW-5-20171017**		**CSW-5-20180509**		**DUP-04-20180509**		**CSW-5-20181025**	
Date Sampled:	[1]	**7/12/2017**		**7/12/2017**		**10/17/2017**		**5/9/2018**		**5/9/2018**		**10/25/2018**	
Duplicate of:				**CSW-5-20170712**						**CSW-5-20180509**			
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.19*		*0.23*		0.028	J	0.022	J	0.025	J	*0.05*	J
ARSENIC	0.01	0.0032		0.0035		0.0033		0.0027	J	0.0027	J	0.0026	J
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0005		0.00049	J	0.00036	J	0.0004	J	0.00042	J	0.00017	J
CALCIUM	NS	260		260		230		200		190		200	
IRON	0.3	*630*		*590*		*620*		*590*		*610*		*560*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	260		270		200		180		170		180	
MANGANESE	0.05	*170*		*160*		*180*		*150*		*160*		*150*	
NICKEL[2]	0.073	***0.24***		***0.25***		***0.2***		***0.18***		***0.18***		***0.18***	
POTASSIUM	NS	19		20		17		14		14		15	
SODIUM	NS	440		450		350		300		290		310	
ZINC	5	0.22		0.23		0.18		0.17	J	0.17	J	0.18	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	2.9	J	2.9	J	2.4		4.5	J	3.3	J	2.2	J
CHLORIDE	250	*480*		*490*		*500*		*450*		*430*		*440*	J
FLUORIDE	2	1	U	1	U	0.06	U	1	U	1	U	0.1	UJ
NITRATE	NS	0.05	U	0.05	U	0.01	U	NA		NA		NA	
NITRITE	NS	0.05	U	0.05	U	0.2	UJ	NA		NA		NA	
SULFATE	250	*3200*		*3200*		*2800*		*3000*		*3200*		*3200*	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.25	U	0.025	U	0.025	UJ	0.025	U	0.025	U	0.081	U
NITROGEN, NITRATE (TO9 calculated)	1	**ND**		**ND**		**ND**		0.05	U	0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	**ND**		**ND**		**ND**		0.05	U	0.05	U	0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	1.23	U	12.2	U	5.73	U	29.9	U	14.4	U	-2.08	U
GROSS BETA[4]	50	17.5	J	9.7	U	1.02	U	11.8	U	19	J	9.4	U
RADIUM-226[5]	5	0.497	J	0.763	J	0.399	J	0.289	J	0.254	J	0.605	J
RADIUM-228[5]	5	1.92		1.56		1.28	U	1.97		1.19		1.84	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	78		82		120		15	J	5	U	94	U
TOTAL DISSOLVED SOLIDS	500	*4600*		*6400*		*5300*	J	*4900*		*4900*		*4900*	
TOTAL SUSPENDED SOLIDS	NS	130		140		10	U	33		31		72	
FIELD PARAMETERS													
pH (S.U.)	6.5-8.5	**5.55**		NA		**5.31**		**5.29**		NA		**5.48**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	3.83		NA		5.34		4.98		NA		4.84	
TEMPERATURE (°c)	NS	27.88		NA		14.47		16.9		NA		14.56	
TURBIDITY (NTU)	NS	9.28		NA		1.67		3		NA		5.51	
DISSOLVED OXYGEN (mg/L)	NS	0		NA		0.93		0		NA		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	62		NA		36		25		NA		67	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	CSW-7										CSW-9							
Sample Number:	**SMCL**	**CSW-7-20170711**		**CSW-7-20171017**		**DUP-04-20171017**		**CSW-7-20180508**		**CSW-7-20181024**		**CSW-9-20170712**		**CSW-9-20171006**		**CSW-9-20180501**		**CSW-9-20181023**	
Date Sampled:	[1]	**7/11/2017**		**10/17/2017**		**10/17/2017**		**5/8/2018**		**10/24/2018**		**7/12/2017**		**10/6/2017**		**5/1/2018**		**10/23/2018**	
Duplicate of:						**CSW-7-20171017**													
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.24*		*0.14*		*0.14*		*0.12*		*0.11*		*0.18*		0.036	J	0.045	J	*0.064*	J
ARSENIC	0.01	0.0042		0.0053		0.0041		0.0044		0.0038		0.003	U	0.0023	J	0.003	U	0.0022	J
BERYLLIUM	0.004	**0.0041**		**0.004**		**0.0042**		0.0035		0.0027		**0.0088**		**0.0088**	J	**0.0086**		**0.0081**	
CADMIUM	0.005	0.00049	J	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.00057		0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	300		310		290		240		180		320		270	J	290		270	
IRON	0.3	*320*		*320*		*300*		*280*		*220*		*620*		*620*	J	*610*		*660*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	250		250		230		210		140		260		200	J	210		210	
MANGANESE	0.05	*230*		*260*		*260*		*190*		*660*	J	*180*		*190*	J	*180*		*190*	
NICKEL[2]	0.073	***1.4***		***1.6***		***1.5***		***1.3***		***0.85***	J	***0.59***		***0.53***	J	***0.53***		***0.48***	
POTASSIUM	NS	13		13		13		11		8.2	J	16		13	J	14		14	
SODIUM	NS	410		420		390		340		240		350		350	J	370		360	
ZINC	5	4		4.3		4		3.6		2.4		0.02		0.01	J	0.017	J	0.016	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	25	U	2.7		2.7		2.6		4.4	J	3.1	J	2.6		2.4		50	U
CHLORIDE	250	*730*		*720*		*790*		*550*		*500*		*650*		*680*		*590*		*630*	
FLUORIDE	2	*5*	U	0.06	U	0.06	U	0.077	J	1	U	1	U	0.06	U	0.1	UJ	*10*	U
NITRATE	NS	0.05	U	0.01	U	0.0079	J	NA		NA		0.05	U	0.01	U	NA		NA	
NITRITE	NS	0.05	U	0.2	UJ	0.2	UJ	NA		NA		0.05	U	0.1	UJ	NA		NA	
SULFATE	250	*3000*		*2500*		*2500*		1	U	*1800*	J	*3400*		*2900*		*2800*		*2900*	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.25	U	0.025	UJ	0.025	UJ	0.025	U	0.077	J	0.025	U	0.025	U	0.025	U	0.08	UJ
NITROGEN, NITRATE (TO9 calculated)	1	**ND**		**ND**		0.0018	J	0.05	U	0.05	U	ND		ND		0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	**ND**		**ND**		**ND**		0.05	U	0.05	R	ND		ND		0.05	U	0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	4.6	U	11.5	U	-6.61	U	7.76	U	3.3	U	13	U	-1.42	U	-3.05	U	6.01	U
GROSS BETA[4]	50	14		10.6	U	1.54	U	15.4		11.7		4.02	U	13.6	U	7.08	U	10.7	U
RADIUM-226[5]	5	**2.14**		**1.78**		1.59		**1.89**		**1.87**		0.854	J	0.728	J	0.662	J	0.973	U
RADIUM-228[5]	5	**4.81**		**4.13**		3.37		**4.31**		**3.31**		1.32		2.11	U	1.27		0.861	J
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	21	U	58		57		5	U	5	U	43		22		83		5	U
TOTAL DISSOLVED SOLIDS	500	*4700*		*5400*	J	*5400*	J	*4200*		*3500*		*5300*		*5600*		*5100*		*5400*	
TOTAL SUSPENDED SOLIDS	NS	30		4.6	U	1	U	13		94	J	86		54		6.1		54	
FIELD PARAMETERS																			
pH (S.U.)	6.5-8.5	**5.43**		**5.39**		NA		**5.38**		**5.3**		**5.62**		**5.09**		**5.55**		**5.54**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	4.9		5.32		NA		4.81		5.04		4.04		5.21		5.75		5.38	
TEMPERATURE (°c)	NS	22.72		17.57		NA		21.06		16.68		27.22		19.55		15.24		16.18	
TURBIDITY (NTU)	NS	11.4		2.22		NA		6.2		16.5		3.92		1.44		2.01		1.6	
DISSOLVED OXYGEN (mg/L)	NS	0		0		NA		0		0		0		0.6		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	78		24		NA		74		97		54		40		26		43	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-10**								**CSW-13**							
Sample Number:	**SMCL**	**CSW-10-20170628**		**CSW-10-20171003**		**CSW-10-20180426**		**CSW-10-20181017**		**CSW-13-20170630**		**CSW-13-20171003**		**CSW-13-20180502**		**CSW-13-20181019**	
Date Sampled:	[1]	**6/28/2017**		**10/3/2017**		**4/26/2018**		**10/17/2018**		**6/30/2017**		**10/3/2017**		**5/2/2018**		**10/19/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*37*		*31*		*34*		*35*		*1.3*		*0.17*		*0.2*		*0.64*	
ARSENIC	0.01	0.0058		0.0093		**0.011**		**0.011**		0.0031		0.0022	J	0.0024	J	0.0029	J
BERYLLIUM	0.004	**0.023**		**0.02**		**0.02**		**0.023**		0.003		0.0004	U	0.00069		0.0018	
CADMIUM	0.005	**0.007**		0.0032		0.0024		0.0027		0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	300		270		280		290		25		19		20		17	
IRON	0.3	*460*		*510*		*520*		*500*		*57*		*39*		*47*		*43*	
LEAD	0.015	0.0054		0.0051		0.0044		0.0046		0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	270		220		230		240		14		8.8		10		9.3	
MANGANESE	0.05	*210*		*240*		*230*		*240*		*2.6*		*1.7*		*1.9*		*1.7*	
NICKEL[2]	0.073	***0.63***		***0.53***		***0.52***		***0.51***		0.053		0.019		0.026		0.033	
POTASSIUM	NS	20		17		19		20		3.2		2.6		2.9		2.4	
SODIUM	NS	440		420		510		480		39		27		32		30	
ZINC	5	1.6		1.4		1.3		1.3		0.16		0.034		0.074		0.11	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	5.9	J	2.9		2.8		47	J	0.26	J	0.16	J	0.5	U	0.38	J
CHLORIDE	250	*770*		*790*		*660*		*690*		81		53		54		61	
FLUORIDE	2	1.6	J	0.25		1.4		*10*	U	0.14		0.083	J	0.14		0.083	J
NITRATE	NS	0.05	U	0.01	U	NA		NA		0.05	U	0.0077	J	NA		NA	
NITRITE	NS	0.05	U	0.2	U	NA		NA		0.05	U	0.01	U	NA		NA	
SULFATE	250	*3300*		*3200*		*3700*		*3300*		45		81		180		190	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.25	U	0.025	U	0.025	U	0.042	U	0.025	U	0.025	U	0.025	U	0.01	J
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		NA		0.05	U	ND		0.0017	J	0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		NA		0.05	UJ	ND		ND		0.05	U	0.05	UJ
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	**50.7**		6.49	U	21.9	U	**35.8**		1.29	U	0.87	U	1.41	U	2.69	U
GROSS BETA[4]	50	28		***57.4***		39.9		34.1		4.5	U	2.38	J	3.07	J	2.03	J
RADIUM-226[5]	5	**1.23**		1.21		**1.3**		**1.8**		0.564	J	0.33	J	0.296	J	0.647	U
RADIUM-228[5]	5	**10.8**		0.676	J	**14.1**		**17.2**		0.204	U	0.38	U	-0.00193	U	0.254	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	5	U	5	U	5	U	5	U	33		5	U	5	U	33	
TOTAL DISSOLVED SOLIDS	500	*6000*		*6600*		*6200*		*6100*		470		320		340		340	
TOTAL SUSPENDED SOLIDS	NS	23		15		11		23		38		29		7		8.1	
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**3.92**		**3.72**		**4.08**		**3.98**		**5.8**		**5.67**		**6.14**		**5.4**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	6.13		6.3		5.78		6.4		0.577		0.55		0.562		0.531	
TEMPERATURE (°c)	NS	14.83		15.99		17.99		14.84		17.85		16.3		16.35		15.66	
TURBIDITY (NTU)	NS	5.3		9.92		11.7		17.9		3.61		1.53		7.31		1.15	
DISSOLVED OXYGEN (mg/L)	NS	0		0		0		0		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	219		175		183		226		46		-54		-30		54	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-27**										**CSW-28**							
Sample Number:	**SMCL**	**CSW-27-20170714**		**DUP-04-20170714**		**CSW-27-20171011**		**CSW-27-20180427**		**CSW-27-20181029**		**CSW-28-20170714**		**CSW-28-20171011**		**CSW-28-20180427**		**CSW-28-20181026**	
Date Sampled:	[1]	**7/14/2017**		**7/14/2017**		**10/11/2017**		**4/27/2018**		**10/29/2018**		**7/14/2017**		**10/11/2017**		**4/27/2018**		**10/26/2018**	
Duplicate of:				**CSW-27-20170714**															
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.21*		*0.23*		*0.16*		*0.34*		*0.32*		*3.5*		*13*		*15*		*13*	
ARSENIC	0.01	0.0017	J	0.003	U	0.004		0.0045		0.0046		0.0081		**0.016**		**0.012**		**0.012**	
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.00017	J	0.0004	U	0.0031		**0.0094**		**0.0062**		**0.007**	
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.00026	J	0.0023		**0.04**	U	0.0004	U	0.0021	
CALCIUM	NS	150	J	150	J	160	J	140		130		230	J	260	J	190		210	
IRON	0.3	*330*	J	*360*	J	*380*		*320*		*290*		*470*	J	*540*		*390*		*400*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	140	J	150	J	150		140		130		220	J	270		200		230	
MANGANESE	0.05	*88*	J	*91*	J	*92*	J	*86*		*82*	J	*150*	J	*200*	J	*150*		*150*	
NICKEL[2]	0.073	0.055	J	0.06	J	0.059		0.058	J	0.069		***0.55***	J	***0.84***		***0.69***	J	***0.69***	
POTASSIUM	NS	19		21		21		19	J	19	J	27		26		18	J	24	
SODIUM	NS	260	J	290	J	300		280		250		360	J	420		330		380	
ZINC	5	0.033	J	0.037	J	0.036		0.064	J	0.11		0.96	J	1.5		1.2	J	1	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	10	U	10	U	2.7		2.6		2	J	5	U	2.5		2.6		4.6	J
CHLORIDE	250	*490*		*500*		*450*		*420*		*380*	J	*720*		*680*		*590*		*700*	J
FLUORIDE	2	*2*	U	*2*	U	0.06	UJ	0.2	U	0.2	UJ	0.88	J	0.51	J	1		1.2	J
NITRATE	NS	0.05	U	0.05	U	0.014	J	NA		NA		0.05	U	0.011	J	NA		NA	
NITRITE	NS	0.05	U	0.05	U	0.2	U	NA		NA		0.05	U	0.2	U	NA		NA	
SULFATE	250	*1700*		*1700*		*1400*		*1700*		*1600*	J	*2900*		*2600*		*2800*		*2700*	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.25	U	0.25	U	0.025	U	0.025	UJ	0.066		0.25	U	0.025	U	1.8	J	0.023	J
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		0.0032	J	NA		0.05	U	ND		0.0025	J	NA		0.1	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		ND		NA		0.05	U	ND		ND		NA		0.1	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	**17.8**	U	11.7	U	10.4	U	6.63	U	4.51	U	14.4	U	7.93	U	22.2	U	3.09	U
GROSS BETA[4]	50	22.5	J	14.9	J	17.2		17.1		7.8	U	24.1		18.6		18.8		***571***	
RADIUM-226[5]	5	0.359	J	0.352	J	0.27	U	0.22		0.133	U	0.798	J	0.814	J	1.4		**2**	
RADIUM-228[5]	5	1.16		1.34		2.15		1.15		0.484	U	1.53		2.36		3.57		**4.19**	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	91		93		67		59		47		28		9.1		5	U	10	
TOTAL DISSOLVED SOLIDS	500	*3500*		*3600*		*3300*		*2900*		*2600*		*5000*		*5500*		*5100*		*5400*	
TOTAL SUSPENDED SOLIDS	NS	82		140		100		46		51		130		200		36		66	
FIELD PARAMETERS																			
pH (S.U.)	6.5-8.5	**6.05**		NA		**5.64**		**5.35**		**5.47**		**6.08**		**5.59**		**4.98**		**5.2**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	3.67		NA		4		3.46		3.45		4.8		5.6		5.33		5.76	
TEMPERATURE (°c)	NS	23.62		NA		18.24		15.79		16.84		23.99		18.59		13.37		13.57	
TURBIDITY (NTU)	NS	18		NA		10.2		9.12		19		59.6		75.6		8.83		44.5	
DISSOLVED OXYGEN (mg/L)	NS	0		NA		0		0.94		0		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	10		NA		-30		-19		68		-62		-30		45		44	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-29**											
Sample Number:	**SMCL**	**CSW-29-20170627**		**CSW-29-20171003**		**DUP-01-20171003**		**CSW-29-20180426**		**DUP-01-20180426**		**CSW-29-20181017**	
Date Sampled:	**(1)**	**6/27/2017**		**10/3/2017**		**10/3/2017**		**4/26/2018**		**4/26/2018**		**10/17/2018**	
Duplicate of:						**CSW-29-20171003**				**CSW-29-20180426**			
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.05*	U	0.043	J	0.042	J	*0.05*	U	0.02	J	0.022	J
ARSENIC	0.01	0.0038		0.0034		0.0035		0.0079		0.0081		0.0081	
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	53	J	54		54		55		56		59	
IRON	0.3	*47*	J	*51*		*54*		*61*		*62*		*68*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	34	J	35		33		36		37		41	
MANGANESE	0.05	*31*	J	*33*		*33*		*33*		*32*		*37*	
NICKEL[2]	0.073	0.018		0.016		0.016		0.02		0.021		0.022	
POTASSIUM	NS	11		10		9.8		11		11		11	
SODIUM	NS	25	J	28		28		31		32		37	
ZINC	5	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.41	J	0.4		0.39		0.51		0.75	J	2.3	J
CHLORIDE	250	13		15		15		16		17		21	
FLUORIDE	2	0.049	J	0.059	J	0.058	J	0.081	J	0.32	J	1	U
NITRATE	NS	0.05	U	0.0071	J	0.0083	J	NA		NA		NA	
NITRITE	NS	0.05	U	0.01	U	0.01	U	NA		NA		NA	
SULFATE	250	220		*250*		*250*		*250*		*250*		*300*	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.092	
NITROGEN, NITRATE (TO9 calculated)	1	ND		0.0016	J	0.0019	J	NA		NA		0.05	UJ
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		ND		NA		NA		0.12	
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	-0.0549	U	-1.3	U	1.4	U	0.536	U	2.82	U	0.154	U
GROSS BETA[4]	50	8.65		8.99		6.9		10.2		9.14		5.62	
RADIUM-226[5]	5	0.309	J	0.259	J	0.173	J	0.223	U	0.279	U	0.42	U
RADIUM-228[5]	5	0.405	J	0.249	U	0.617	J	0.235	U	0.43	J	0.361	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	160		130		150		150		150		210	
TOTAL DISSOLVED SOLIDS	500	*530*		*610*		*600*		*560*		450		*670*	
TOTAL SUSPENDED SOLIDS	NS	26		59		58		67		80		43	
FIELD PARAMETERS													
pH (S.U.)	6.5-8.5	**6.45**		**6.32**		NA		6.52		NA		**6.23**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.751		0.948		NA		0.988		NA		1.15	
TEMPERATURE (°c)	NS	16.24		17.87		NA		16.63		NA		17.33	
TURBIDITY (NTU)	NS	5.26		4.13		NA		6.64		NA		5.17	
DISSOLVED OXYGEN (mg/L)	NS	0		0.62		NA		2.53		NA		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-32		-63		NA		-144		NA		-53	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	CSW-31										CSW-32							
Sample Number:	SMCL	CSW-31-20170707		CSW-31-20171010		CSW-31-20180501		CSW-31-20181016		DUP-01-20181016		CSW-32-20170629		CSW-32-20171005		CSW-32-20180503		CSW-32-20181023	
Date Sampled:	(1)	7/7/2017		10/10/2017		5/1/2018		10/16/2018		10/16/2018		6/29/2017		10/5/2017		5/3/2018		10/23/2018	
Duplicate of:										CSW-31-20181016									
INORGANICS		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
ALUMINUM	0.05	*1.6*		*0.7*		*0.13*		*0.089*	J	*0.091*	J	*0.05*	U	0.024	J	*0.05*	U	0.023	J
ARSENIC	0.01	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.0021	J	0.0019	J	0.0018	J	0.0065	
BERYLLIUM	0.004	0.0005		0.00056		0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	21		26		110		53		55		150	J	130		150		140	
IRON	0.3	*27*		*22*		*1.8*		*2.2*		*2.3*		*470*	J	*560*		*670*		*520*	
LEAD	0.015	0.0025	U	0.0011	J	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	3.2		2.6		0.46		0.33		0.33		77	J	71		80		72	
MANGANESE	0.05	*0.36*	U	*0.24*		0.038		0.03		0.029		*15*	J	*10*		*9*		*12*	
NICKEL[2]	0.073	0.005	U	0.0026	J	0.015		0.0082		0.0086		0.045		0.022		0.0072		0.026	
POTASSIUM	NS	19		23		15		6.7		6.8		8.6	J	6		6.1		6	
SODIUM	NS	15		15		30		19		19		130	J	130		160		120	
ZINC	5	0.29		0.57		0.072		0.016	J	0.017	J	0.023		0.02	U	0.02	U	0.027	U
ANIONS		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
BROMIDE	NS	0.5	U	0.1	U	0.66		0.49	U	0.49	U	0.96		1		2.1	J	5	U
CHLORIDE	250	5.4		6.5		44		44		44		230		*270*		*280*		*250*	
FLUORIDE	2	0.14		0.067	J	0.12	J	0.059	J	0.057	J	*2.6*	J	0.06	U	0.5	U	1	U
NITRATE	NS	0.05	U	0.011	U	NA		NA		NA		0.05	U	0.01	U	NA		NA	
NITRITE	NS	0.05	U	0.01	UJ	NA		NA		NA		0.05	U	0.2	UJ	NA		NA	
SULFATE	250	2.2		2.3		6.3	J	2.2		2.1		*1800*		*1600*		*2400*		*2100*	
NITROGEN		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
NITROGEN, NITRATE-NITRITE	10	0.011	J	0.025	U	0.025	U	0.025	U	0.025	U	0.13	U	0.025	U	0.025	UJ	0.091	UJ
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		0.05	U	0.05	U	0.05	U	ND		ND		0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	U	0.05	U	ND		ND		0.05	U	0.05	U
RADIONUCLIDES		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
GROSS ALPHA[3]	15	1.6	J	6.98		0.47	U	2.35	J	0.0253	U	5.75	U	0.96	U	-7.08	U	9.11	U
GROSS BETA[4]	50	16.1		20.7		10.3		4.63		5.71		5.85	U	4.47	U	8.41	U	7.58	U
RADIUM-226[5]	5	0.97	J	1.67		0.391	J	0.358	U	0.645	U	0.22	J	0.235	J	0.326	J	0.47	U
RADIUM-228[5]	5	0.893	J	0.9	J	0.452	J	0.451	U	0.523	J	0.645	J	0.286	U	1.02		0.431	U
MISCELLANEOUS		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
ALKALINITY, TOTAL	NS	99		110		240		110		100		5	U	5	U	5	U	5	U
TOTAL DISSOLVED SOLIDS	500	110		140		*4000*		150		150		*2500*		*3100*		*2900*		*3100*	
TOTAL SUSPENDED SOLIDS	NS	66		80		21		15		17		180		130		160		88	
FIELD PARAMETERS																			
pH (S.U.)	6.5-8.5	**8.74**		8.02		**12.51**		**11.6**		NA		**6.16**		**5.89**		**5.72**		**5.79**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.255		0.264		1.63		0.687		NA		2.67		3.48		3.14		3.1	
TEMPERATURE (°c)	NS	19.13		17.95		16.55		15.28		NA		17.2		16.81		16.01		17.7	
TURBIDITY (NTU)	NS	105		165		6.81		4.29		NA		19		12.2		14.9		30	
DISSOLVED OXYGEN (mg/L)	NS	0		0.36		0		0		NA		0		0.4		0.52		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-242		-373		-317		-298		NA		-51		-76		-144		-12	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-33**											
Sample Number:	**SMCL**	**CSW-33-20170629**		**DUP-01-20170629**		**CSW-33-20171005**		**CSW-33-20180503**		**CSW-33-20181023**		**DUP-03-20181023**	
Date Sampled:	[1]	**6/29/2017**		**6/29/2017**		**10/5/2017**		**5/3/2018**		**10/23/2018**		**10/23/2018**	
Duplicate of:				**CSW-33-20170629**								**CSW-33-20181023**	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*1*	J	*0.05*	U	*1.6*		*0.74*		*0.64*	J	*0.94*	J
ARSENIC	0.01	0.0016	J	0.0023	J	0.003	U	0.003	U	0.003	U	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	270	J	150	J	250		180		110		110	
IRON	0.3	*0.52*	J	*480*	J	0.2		*2.2*		*1.8*		*1.9*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	0.34	J	83	J	0.23	J	3.6		3.3		2.9	
MANGANESE	0.05	0.011	J	*16*	J	0.0041	J	*0.57*		*0.48*		*0.39*	
NICKEL[2]	0.073	0.013	J	0.05	J	0.012		0.0074		0.005		0.0048	J
POTASSIUM	NS	42	J	9.2	J	22		21		14		14	
SODIUM	NS	44	J	140	J	36		30		22		20	
ZINC	5	0.058	J	0.025	J	0.017	J	0.017	J	0.017	U	0.01	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.34	J	1.4	J	0.54		0.45	J	0.3	J	0.5	U
CHLORIDE	250	29	J	230	J	44		24		21		20	
FLUORIDE	2	0.17	J	*5*	U	0.14		0.12		0.089	J	0.095	J
NITRATE	NS	0.05	U	0.05	U	0.0088	J	NA		NA		NA	
NITRITE	NS	0.05	U	0.05	U	0.01	UJ	NA		NA		NA	
SULFATE	250	5.7	J	*1900*	J	5.3		9.1		21		20	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.13	U	0.029	J	0.025	UJ	0.025	UJ	0.025	UJ
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		0.0020	J	0.05	U	0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		ND		0.05	U	0.05	U	0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	4.32	U	9.73	U	1.17	U	-0.807	U	4.58		0.459	U
GROSS BETA[4]	50	28.5	J	8.68	U	18.2		49.3		10		7.93	
RADIUM-226[5]	5	0.518	J	0.278	J	0.411	J	0.484	J	0.752	U	0.695	U
RADIUM-228[5]	5	0.279	U	0.662	J	0.107	U	0.331	U	0.301	U	0.235	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	710	J	5	U	620		380		220		220	
TOTAL DISSOLVED SOLIDS	500	*830*	J	*2600*	J	*820*		470		300		300	
TOTAL SUSPENDED SOLIDS	NS	8.9		200		7.1		62		83		98	
FIELD PARAMETERS													
pH (S.U.)	6.5-8.5	**13.89**		**NA**		**12.85**		**12.29**		**12.12**		NA	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	3.41		NA		3.1		2.27		1.53		NA	
TEMPERATURE (°c)	NS	16.33		NA		17.47		15.91		13.51		NA	
TURBIDITY (NTU)	NS	5.8		NA		6.85		8.44		19		NA	
DISSOLVED OXYGEN (mg/L)	NS	0		NA		0		0		0		NA	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-194		NA		-352		-266		-217		NA	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-34**								**CSW-35**							
Sample Number:	**SMCL**	**CSW-34-20170714**		**CSW-34-20171011**		**CSW-34-20180427**		**CSW-34-20181025**		**CSW-35-20170713**		**CSW-35-20171013**		**CSW-35-20180426**		**CSW-35-20181026**	
Date Sampled:	[1]	**7/14/2017**		**10/11/2017**		**4/27/2018**		**10/25/2018**		**7/13/2017**		**10/13/2017**		**4/26/2018**		**10/26/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.63*		*0.56*		*0.6*		*0.51*		*0.22*		*0.93*		*0.13*		*0.16*	
ARSENIC	0.01	0.0016	J	0.0024	J	0.0016	J	0.003	U	0.003	U	0.0024	J	0.0021	J	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	200	J	320	J	350		310		150	J	190	J	390		390	
IRON	0.3	*1.6*	J	0.29		0.2		*0.35*		*2*		*0.41*	J	0.21		0.19	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	0.77	J	0.097	J	0.09	J	0.18	J	0.6		0.046	J	0.031	J	0.032	J
MANGANESE	0.05	0.038	J	0.0052	J	0.0021	U	0.0076		*0.061*	J	0.0046	J	0.005	U	0.0024	U
NICKEL[2]	0.073	0.012	J	0.019		0.02	J	0.019		0.0052		0.011		0.019		0.024	
POTASSIUM	NS	200		130		120	J	87		450		340		330		210	
SODIUM	NS	100	J	100		100		85		200	J	160	J	210		160	
ZINC	5	0.02	UJ	0.02	U	0.02	UJ	0.013	J	0.02	U	0.02	U	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.5	U	0.53		1		0.79	J	0.31	J	0.25		0.57		5	UJ
CHLORIDE	250	9.6		21		39		56	J	11		9.9		23		35	J
FLUORIDE	2	0.1		0.11	J	0.1	U	0.1	UJ	0.1	U	0.18		0.1	U	1	UJ
NITRATE	NS	0.05	U	0.031		NA		NA		0.038	J	0.031		NA		NA	
NITRITE	NS	0.05	U	0.01	U	NA		NA		0.028	J	0.011	J	NA		NA	
SULFATE	250	16		19		28		26	J	39	J	31		64		47	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.039	J	0.038	J	0.096	J	0.12	U	0.03	J	0.036	J	0.041	J	0.023	J
NITROGEN, NITRATE (TO9 calculated)	1	ND		0.0070		NA		0.05		0.0086	J	0.0070		NA		0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		NA		0.15		0.01	J	0.0033	J	NA		0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	3.3	U	5.58	U	11.4	U	5.63	U	**15.3**		3.91	U	7.92	U	15	U
GROSS BETA[4]	50	***163***		***83.1***		***95.4***		***71.5***		***354***		***260***		***252***		***136***	
RADIUM-226[5]	5	0.923	J	1.04		1.07		0.0567	U	1.87		1.57		1.73		1.17	
RADIUM-228[5]	5	0.942	J	1.37		0.776	J	1.31		1.56	U	2.21		1.1		1.19	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	950		880		990		990		1300		1100		1600		1500	J
TOTAL DISSOLVED SOLIDS	500	*1200*		*1500*		*1500*		*1200*		*2100*		*1800*		*1700*		*1800*	
TOTAL SUSPENDED SOLIDS	NS	60		13		5.7		7.3		16		24		3.1		7.9	
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**12.31**		**12.37**		**13.21**		**12.66**		**12.45**		**12.5**		**12.56**		**12.76**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	4.2		5.56		6.27		5.05		6.52		5.83		7.12		6.83	
TEMPERATURE (°c)	NS	20.71		15.59		14.78		14.37		21.17		15.19		15		14.47	
TURBIDITY (NTU)	NS	19.4		11		5.24		10.9		7.38		13.3		0.11		5.16	
DISSOLVED OXYGEN (mg/L)	NS	0.18		1.29		0		0		0.48		1.05		0.56		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-209		-433		-425		-258		-231		-582		-306		-301	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-36**								**CSW-37**							
Sample Number:	**SMCL**	**CSW-36-20170717**		**CSW-36-20171004**		**CSW-36-20180503**		**CSW-36-20181025**		**CSW-37-20170629**		**CSW-37-20171006**		**CSW-37-20180425**		**CSW-37-20181015**	
Date Sampled:	[1]	**7/17/2017**		**10/4/2017**		**5/3/2018**		**10/25/2018**		**6/29/2017**		**10/6/2017**		**4/25/2018**		**10/15/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*5.3*		*0.21*	J	*0.38*		*0.34*		*0.065*	J	0.036	J	*0.05*	U	*0.05*	U
ARSENIC	0.01	0.0075		0.0017	J	0.0018	J	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U
BERYLLIUM	0.004	0.00066		0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	93		370	J	480		520		28	J	17	J	13		12	
IRON	0.3	*5.4*		0.12	J	0.084	U	0.088	J	*22*	J	*25*	J	*24*		*25*	
LEAD	0.015	0.0049		0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	2.4		0.12	J	0.058	U	0.11	J	3	J	2.6	J	2.6		2.5	
MANGANESE	0.05	*0.076*		0.0095	UJ	0.0043	U	0.0095		*0.34*	J	*0.23*	J	*0.19*		*0.19*	
NICKEL[2]	0.073	0.0094		0.013	J	0.019		0.021		0.005	U	0.005	U	0.005	U	0.005	U
POTASSIUM	NS	84		130		70		46		2.8	J	2.5	J	2.3		2.3	
SODIUM	NS	82		100	J	70		57		18	J	18	J	19		19	
ZINC	5	0.012	J	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.41	J	0.19	J	0.77		0.26	J	0.26	J	0.18	J	0.32	J	5	UJ
CHLORIDE	250	12		12		38		68	J	23		30		31		28	
FLUORIDE	2	0.42		0.18	J	0.12		0.1	UJ	0.12		0.063	J	0.083	J	1	U
NITRATE	NS	0.05	U	0.013	J	NA		NA		0.05	U	0.01	U	NA		NA	
NITRITE	NS	0.05	U	0.01	UJ	NA		NA		0.05	U	0.01	UJ	NA		NA	
SULFATE	250	12		11		7.4		9	J	2.4		0.22	J	0.7	J	10	U
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.032	U	0.013	U	0.084	J	0.014	U	0.025	U	0.025	U	0.025	U	0.025	UJ
NITROGEN, NITRATE (TO9 calculated)	1	ND		0.0029	J	0.035	J	0.05	U	ND		ND		0.05	R	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	U	ND		ND		0.05	R	0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	9.74		-2.94	U	-5.83	U	4.73	U	1.9	J	0.882	U	0.272	U	0.939	U
GROSS BETA[4]	50	***70.3***		***111***		44		31.6		3.07	J	2.74	J	2.3	J	2.86	J
RADIUM-226[5]	5	0.779	J	1.7		1.59		1.55		0.916	J	0.714	J	0.526	U	0.784	U
RADIUM-228[5]	5	1.07	U	1.12		1.14		1.46		0.95	J	1.72	U	0.768	J	1.57	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	360		1200		1300		1300		87		61		68		72	
TOTAL DISSOLVED SOLIDS	500	*500*		*1600*		*1600*		*1500*		150		160		130		110	
TOTAL SUSPENDED SOLIDS	NS	250		3.2		5		2.1		28		27		11		8.6	
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**11.98**		**12.29**		**12.05**		**12.6**		7.04		**6.1**		**5.99**		**5.92**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	1.65		5.07		6.07		5.75		0.122		0.264		0.268		0.278	
TEMPERATURE (°c)	NS	22.16		18.67		21.33		16.25		16.66		15.47		14.41		15.24	
TURBIDITY (NTU)	NS	183		3.24		2.75		1.88		8.34		10		0		7.3	
DISSOLVED OXYGEN (mg/L)	NS	0		1.23		0.75		0		0		0.74		1.57		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-359		-580		-313		-293		-91		-61		-132		-9	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**CSW-38**								**CSW-39**							
Sample Number:	**SMCL**	**CSW-38-20170705**		**CSW-38-20171005**		**CSW-38-20180501**		**CSW-38-20181023**		**CSW-39-20170628**		**CSW-39-20171002**		**CSW-39-20180507**		**CSW-39-20181022**	
Date Sampled:	[1]	**7/5/2017**		**10/5/2017**		**5/1/2018**		**10/23/2018**		**6/28/2017**		**10/2/2017**		**5/7/2018**		**10/22/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.31*		*0.58*		*0.51*		*0.58*		*1*		*2.1*		*11*	J	*9*	
ARSENIC	0.01	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U
BERYLLIUM	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.00022	J	0.00053		0.00031	J
CADMIUM	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	130		170		220		220		19		27		28		40	
IRON	0.3	*10*		*11*		*13*		*3*		*5.3*		*1.9*		*3.9*		*3.3*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0023	J	0.0018	J
MAGNESIUM	NS	10		3.1		3.9		0.76		3.4		1.4		1.7		1.4	
MANGANESE	0.05	*0.18*		*0.13*		*0.18*		0.039		*0.11*		*0.058*		*0.064*		0.048	
NICKEL[2]	0.073	0.0075		0.0071		0.009		0.012		0.0033	U	0.002	J	0.0038	J	0.005	
POTASSIUM	NS	21		18		13		10		17		50		39		37	
SODIUM	NS	73		48		32		31		38		54		48		48	
ZINC	5	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.84		0.69		0.82		0.65		0.25	J	0.16	J	0.29	J	0.36	J
CHLORIDE	250	160		92		64		69		40		38		35		42	
FLUORIDE	2	0.1	U	0.23		0.14	J	0.095	J	0.12		0.091	J	0.11		0.11	
NITRATE	NS	0.05	U	0.01	U	NA		NA		0.05	U	0.01	U	NA		NA	
NITRITE	NS	0.05	U	0.01	UJ	NA		NA		0.05	U	0.01	UJ	NA		NA	
SULFATE	250	160		97		52	J	32		16		11		7.2		7.3	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.034	J	0.025	U	0.025	U	0.025	UJ	0.025	U	0.025	U	0.015	J	0.025	U
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		0.05	U	0.05	U	ND		ND		0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	U	ND		ND		0.05	U	0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	2.26	U	0.141	U	2.67	U	-1.37	U	2.58	U	0.601	U	6.41		4.62	
GROSS BETA[4]	50	14.9		11.4		9.45		2.8	U	16.3		39.6		34.4		37	
RADIUM-226[5]	5	0.28	U	0.268	J	0.294	J	0.293	U	0.546	J	0.516	J	0.731	J	0.82	U
RADIUM-228[5]	5	0.206	U	0.264	U	0.494	J	0.334	U	0.369	J	0.783	J	0.474	J	0.608	J
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	49		270		380		500		84		130		110		120	
TOTAL DISSOLVED SOLIDS	500	*740*		*710*		66	U	*780*		200		270		220		260	
TOTAL SUSPENDED SOLIDS	NS	51		83		45		23		28		110		200		150	
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**9.29**		**11.61**		**12.05**		**12.43**		7.78		**12.26**		**10.7**		**11.6**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.386		1.77		3		2.79		0.343		0.695		0.64		0.879	
TEMPERATURE (°c)	NS	20.56		17.16		18.88		15.61		17.59		17.52		15.66		14.44	
TURBIDITY (NTU)	NS	35.2		34.9		15.8		7.5		26		70.3		158		122	
DISSOLVED OXYGEN (mg/L)	NS	0		1.89		0.32		0		0		0		0.13		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-378		-498		-317		-247		-338		-359		-313		-198	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	MCL/	PZ-1				PZ-2					
Sample Number:	**SMCL**	**PZ-1-20170629**	**PZ-1-20171006**	**PZ-1-20180425**	**PZ-1-20181015**	**PZ-2-20170705**	**PZ-2-20171005**	**DUP-02-20171005**	**PZ-2-20180501**	**DUP-02-20180501**	**PZ-2-20181023**
Date Sampled:	[1]	**6/29/2017**	**10/6/2017**	**4/25/2018**	**10/15/2018**	**7/5/2017**	**10/5/2017**	**10/5/2017**	**5/1/2018**	**5/1/2018**	**10/23/2018**
Duplicate of:								**PZ-2-20171005**		**PZ-2-20180501**	
INORGANICS		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
ALUMINUM	0.05	0.033 J	*0.05* U	0.018 J	0.024 J	*0.098* J	0.024 J	0.018 J	*0.05* U	*0.05* U	0.024 J
ARSENIC	0.01	0.0028 J	0.003 U	0.003 U	0.003 U	0.0045	0.0044	0.0043	0.005	0.0055	0.0053
BERYLLIUM	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CADMIUM	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00022 J	0.0004 U	0.0004 U	0.0004 U
CALCIUM	NS	270	230 J	210	250	14	9.8	9.5	11	11	11
IRON	0.3	*160*	*140* J	*130*	*160*	*99*	*76*	*74*	*76*	*81*	*68*
LEAD	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
MAGNESIUM	NS	280	240 J	220	270	12	9	8.5	9.4	10	8.7
MANGANESE	0.05	*210*	*36* J	*33*	*37*	*1.1*	*0.89*	*0.86*	*0.86*	*0.92*	*0.78*
NICKEL[2]	0.073	0.0032 J	0.0022 J	0.005 U	0.005 U	0.0047 J	0.0029 J	0.0034 J	0.005 U	0.0019 J	0.005 U
POTASSIUM	NS	33	29 J	27	32	2	1.3	1.3	1.3	1.4	1.2
SODIUM	NS	2700	430 J	400	490	86	67	65	55	59	50
ZINC	5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
ANIONS		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
BROMIDE	NS	7.2 J	4.2	7.8 J	6.1 J	0.32 J	0.28	0.28	0.51 J	0.5 J	1 U
CHLORIDE	250	*810*	*750*	*720*	*780*	30	29	29	27 J	27 J	26
FLUORIDE	2	*2.5* U	0.061 J	*2.5* U	*2.5* U	0.097 J	0.1	0.098 J	0.11 J	0.11 J	0.2 U
NITRATE	NS	0.05 U	0.01 U	NA	NA	0.05 U	0.01 U	0.01 U	NA	NA	NA
NITRITE	NS	0.05 U	0.1 UJ	NA	NA	0.05 U	0.01 UJ	0.01 UJ	NA	NA	NA
SULFATE	250	*1400*	*1300*	*1300* J	*1300*	170	110	110	100 J	99 J	85
NITROGEN		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
NITROGEN, NITRATE-NITRITE	10	0.025 U	0.025 U	0.029 J	0.02 J	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 UJ
NITROGEN, NITRATE (TO9 calculated)	1	ND	ND	0.05 R	0.25 U	ND	ND	ND	0.1 U	0.1 U	0.5 U
NITROGEN, NITRITE (TO9 calculated)	10	ND	ND	0.05 R	0.25 U	ND	ND	ND	0.1 U	0.1 U	0.5 U
RADIONUCLIDES		**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**	**pCi/L**
GROSS ALPHA[3]	15	0 U	16 U	-4.39 U	4.4 U	3.36	1.91 U	1.61 U	3.61 J	-0.803 U	0.493 U
GROSS BETA[4]	50	37.7	13.5	21	10.2 U	3.58 U	2.38 J	0.538 U	2.05 J	1.19 U	1.47 U
RADIUM-226[5]	5	0.361 J	0.318 J	0.273 U	0.503 U	1.25	0.86 J	1.02	1.09	1.05	0.875 U
RADIUM-228[5]	5	0.935 J	1.6 U	1.11	1.83	1.04	0.486 U	0.602 U	0.55 J	0.965 J	0.735 J
MISCELLANEOUS		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
ALKALINITY, TOTAL	NS	510	550	550	670	63	110	92	120	130	88
TOTAL DISSOLVED SOLIDS	500	*4100*	*4200*	*3200*	*3600*	340	380	390	330	330	300
TOTAL SUSPENDED SOLIDS	NS	220	160	59	48	110	80	98	48	51	110
FIELD PARAMETERS											
pH (S.U.)	6.5-8.5	6.55	**6.15**	**6.37**	**6.16**	6.75	6.71	**NA**	6.98	**NA**	6.85
SPECIFIC CONDUCTIVITY (mS/cm)	NS	5.39	5.24	4.73	5.1	0.716	0.72	NA	0.712	NA	0.593
TEMPERATURE (°c)	NS	18.4	18.37	16.16	16.85	17.79	18.42	NA	16.65	NA	17.15
TURBIDITY (NTU)	NS	3.04	1.09	1.98	7.2	8.3	2.46	NA	9.81	NA	7.33
DISSOLVED OXYGEN (mg/L)	NS	0	0	0	0.03	0	0	NA	0	NA	0
OXIDATION-REDUCTION POTENTIAL (mV)	NS	-65	-128	-87	-79	-134	-171	NA	-185	NA	-145

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**PZ-3**								**PZ-4**							
Sample Number:	**SMCL**	**PZ-3-20170707**		**PZ-3-20171016**		**PZ-3-20180502**		**PZ-3-20181019**		**PZ-4-20170717**		**PZ-4-20171004**		**PZ-4-20180503**		**PZ-4-20181019**	
Date Sampled:	[1]	**7/7/2017**		**10/16/2017**		**5/2/2018**		**10/19/2018**		**7/17/2017**		**10/4/2017**		**5/3/2018**		**10/19/2018**	
Duplicate of:																	
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*19*		*16*		*16*		*16*	J	*0.16*		*1.2*	J	*5.7*		*2.2*	J
ARSENIC	0.01	0.0042		0.0057		0.0077		0.0045		0.0021	J	0.0042		0.0046		0.0039	
BERYLLIUM	0.004	**0.0089**		**0.0063**		**0.0084**		**0.0084**		0.00031	J	0.0033		**0.0056**		**0.0053**	
CADMIUM	0.005	0.0004	U	0.001		0.0011		0.0013		0.00016	J	0.0004	U	0.0004	U	0.0004	U
CALCIUM	NS	170		140		170		150		370		260	J	200		190	
IRON	0.3	*280*		*240*		*290*		*260*		*130*		*180*	J	*170*		*170*	
LEAD	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
MAGNESIUM	NS	140		120		140		130		100		94	J	92		92	
MANGANESE	0.05	*590*		*120*		*92*		*110*		*54*		*79*	J	*77*		*67*	
NICKEL[2]	0.073	***0.38***		***0.34***		***0.36***		***0.33***	J	0.022		***0.076***	J	***0.15***		***0.14***	J
POTASSIUM	NS	14		12		14		13	J	15		9.7		20		7.6	J
SODIUM	NS	270		240		280		250		210		170	J	160		140	
ZINC	5	0.72		0.64		0.66		0.65		0.02	U	0.03	J	0.064		0.059	
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	5	U	1.9		2		1.8		1.2		1.4		2.1	J	3.6	
CHLORIDE	250	*340*		*330*		*280*		*320*		*300*		*270*		220		230	
FLUORIDE	2	0.82	J	0.35	J	0.43		0.42		0.28		0.89	J	0.49	J	0.55	
NITRATE	NS	0.05	U	0.01	U	NA		NA		0.03	J	0.011	J	NA		NA	
NITRITE	NS	0.05	U	0.2	UJ	NA		NA		0.05	U	0.2	UJ	NA		NA	
SULFATE	250	*2300*		*1800*		*2400*		*3500*		*1200*		*1400*		*1500*		*1500*	
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.25	U	0.025	U	0.025	U	0.04	J	0.025	U	0.025	U	0.025	UJ	0.028	J
NITROGEN, NITRATE (TO9 calculated)	1	ND		ND		0.05	U	0.05	U	0.0068	J	0.0025	J	0.05	U	0.05	U
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	UJ	ND		ND		0.05	U	0.05	UJ
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	-1.48	U	4.74	U	3.47	U	4.97	U	3.39	U	-1.19	U	7.57	U	0.711	U
GROSS BETA[4]	50	21.9		15.3		8.88	U	11.3		13.5		3.43	U	14.7		0.328	U
RADIUM-226[5]	5	0.61	J	0.677	J	0.382	J	0.742	U	0.553	J	0.385	J	0.733	J	0.964	U
RADIUM-228[5]	5	2		2.88	U	1.69		1.96		0.747	U	0.582	J	1.31		1.31	
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	5	U	5	U	5	U	5	U	43		81		66		59	
TOTAL DISSOLVED SOLIDS	500	*3000*		*3400*		*3200*		*3200*		*2400*		*2700*		*2500*		*2300*	
TOTAL SUSPENDED SOLIDS	NS	34		5.6		1200		4.4		84		110		43		19	
FIELD PARAMETERS																	
pH (S.U.)	6.5-8.5	**4.26**		**4.18**		**5.02**		**4.55**		7.27		**6.36**		**5.47**		**5.72**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	3.2		3.74		3.18		3.42		2.92		3.3		3.14		2.82	
TEMPERATURE (°c)	NS	18.88		16.87		21.75		16.14		22.57		18.5		23.2		16.12	
TURBIDITY (NTU)	NS	5.93		4.96		8.8		9.96		9.24		15.8		17.3		6.9	
DISSOLVED OXYGEN (mg/L)	NS	0		0		0		0		0		0		0		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	156		123		108		155		-114		-99		12		11	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Sampling Location:	**MCL/**	**PZ-5**							
Sample Number:	**SMCL**	**PZ-5-20170726**		**PZ-5-20171016**		**PZ-5-20180509**		**PZ-5-20181030**	
Date Sampled:	**(1)**			**10/16/2017**		**5/9/2018**		**10/30/2018**	
Duplicate of:									
INORGANICS		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALUMINUM	0.05	*0.05*	U	*0.05*	U	0.028	J	0.022	J*
ARSENIC	0.01	0.003	U	0.0019	J	0.0018	J	0.0017	J*
BERYLLIUM	0.004	0.0004	U	0.00022	J	0.0004	U	0.0004	U*
CADMIUM	0.005	0.0004	U	0.00024	J	0.00058		0.0004	J*
CALCIUM	NS	21		27		43		50	*
IRON	0.3	*24*		*20*		*5.8*		*8.8*	*
LEAD	0.015	0.0013	J	0.0025	U	0.0025	U	0.0025	U*
MAGNESIUM	NS	15		19		21		18	*
MANGANESE	0.05	*11*		*15*		*16*		*13*	*
NICKEL[2]	0.073	0.042		***0.11***		***0.11***		***0.082***	*
POTASSIUM	NS	5.9		5.5		6.5		6.6	*
SODIUM	NS	22	J	24		31		22	*
ZINC	5	0.048		0.18		0.35	J	0.16	*
ANIONS		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
BROMIDE	NS	0.32	J	0.3		0.41	J	0.35	J
CHLORIDE	250	24		34		23		22	
FLUORIDE	2	0.1	U	0.06	UJ	0.1	U	0.1	U
NITRATE	NS	0.05	U	0.0094	J	NA		NA	
NITRITE	NS	0.05	U	0.01	UJ	NA		NA	
SULFATE	250	130		180		210		190	J
NITROGEN		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
NITROGEN, NITRATE-NITRITE	10	0.025	U	0.029	J	0.28		0.18	*
NITROGEN, NITRATE (TO9 calculated)	1	ND		0.0021	J	0.23		0.24	
NITROGEN, NITRITE (TO9 calculated)	10	ND		ND		0.05	U	0.05	U
RADIONUCLIDES		**pCi/L**		**pCi/L**		**pCi/L**		**pCi/L**	
GROSS ALPHA[3]	15	0.908	U	0.0767	U	3.02		0	U
GROSS BETA[4]	50	5.09		4.31		5.81		6.88	
RADIUM-226[5]	5	0.113	J	0.122	J	0.275	J	0.644	J
RADIUM-228[5]	5	0.868	U	0.836	U	0.402	U	1.38	U
MISCELLANEOUS		**mg/L**		**mg/L**		**mg/L**		**mg/L**	
ALKALINITY, TOTAL	NS	46		39		56		82	*
TOTAL DISSOLVED SOLIDS	500	140		440		430		440	
TOTAL SUSPENDED SOLIDS	NS	7.9	U	3.2		3.1		10	
FIELD PARAMETERS									
pH (S.U.)	6.5-8.5	**4.2**		**5.24**		**5.43**		**6.12**	
SPECIFIC CONDUCTIVITY (mS/cm)	NS	0.474		0.615		0.681		0.655	
TEMPERATURE (°c)	NS	17.13		14.38		16.85		16.89	
TURBIDITY (NTU)	NS	6.17		1.81		3.64		3.77	
DISSOLVED OXYGEN (mg/L)	NS	3.2		1.73		0.79		0	
OXIDATION-REDUCTION POTENTIAL (mV)	NS	334		167		55		-3	

TABLE 4
DATA SUMMARY OF ANALYTICAL RESULTS
COMPARISON JULY 2017 THROUGH OCTOBER 2018
PEARCE CREEK CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Limit of Quantitation (LOQ).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
R -- Non-detected result value is considered unusable due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.
ND -- Not detected and calculated result was not determined.
NS -- Not Specified

(1)MCL = Maximum Contaminant Level National Primary and Secondary Drinking Water Regulations, August 2009.
(2)The Nickel screening level is the Maryland Department of the Environment (MDE) Groundwater Cleanup Standard.
(3)Some non-detect results for Gross Alpha were greater than the screening level
(4)The Gross Beta screening value is 4 millirems per year which cannot be applied to the value reported for Gross Beta in pCi/L, therefore guidance purposes, the Gross Beta results will be compared with the 50 pCi/L screening level provided in the Code of Federal Regulations (CFR) and Code of Maryland Regulations (COMAR) sampling and analysis requirements.
(5)MCL is for Ra-226 and Ra-228 combined.
Bold values exceed the EPA MCL
Italicized values exceed the EPA secondary standard
Bold, italicized values exceed the MDE standard or COMAR standard.

* The asterisked results for samples PZ-5-20181030 were interchanged with RB-20181030 (not shown). The samples for metals, total-nitrate/nitrite, radium-226, radium-228, and alkalinity reported by the laboratory are suspected to have been switched during the sample handling, shipping, or analysis procedures.

FIGURES

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LEGEND

EXISTING MONITORING WELL

NEW MONITORING WELL

ELK RIVER

PEARCE CREEK

N

11A 11R 11C

PZ-1 CSW-37

CSW-31

CSW-39

18B

CSW-38 PZ-2

CSW-7

7B 7A

CSW-9

13A CSW-13

CSW-32 CSW-33

8A 8B

PZ-3

16A CSW-35

CSW-29 CSW-10

21S 21D

PZ-5

CSW-36 PZ-4

CSW-34 CSW-27 CSW-28

14R 12R

CSW-5

BASIN ROAD

SHORT STREET

CIRCLE DRIVE

LOW STREET

MIDWAY DRIVE

SOUTH DRIVE

OLD BARN LANE

MARYLAND DRIVE

WICKWIRE DRIVE

POND CREEK LANE

POND NECK ROAD

0 500 1,000

SCALE IN FEET

Figure 1. MONITORING WELL LOCATIONS
PEARCE CREEK
CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Figure 2. MONITORING WELLS IN THE MAGOTHY AQUIFER

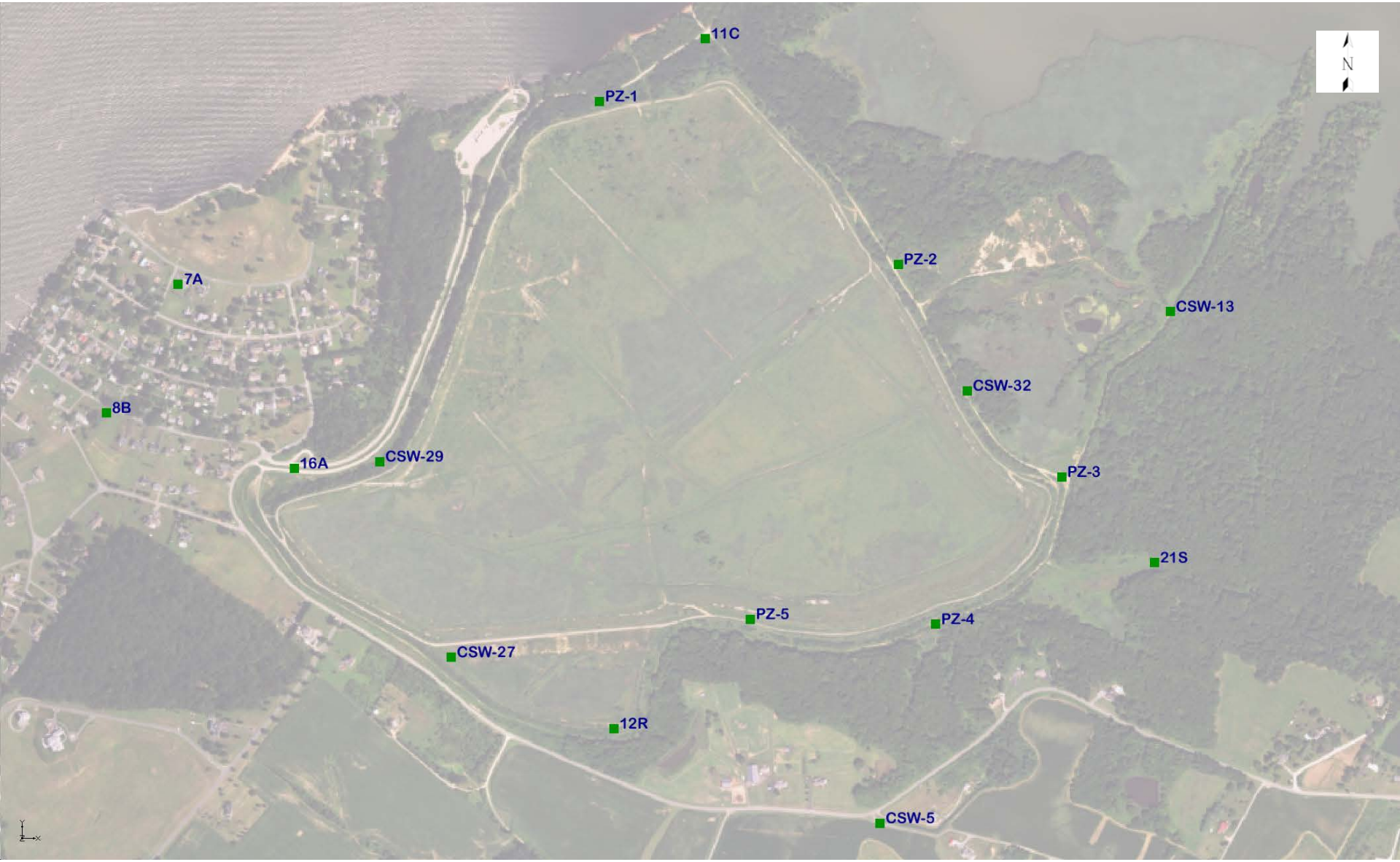


Figure 3. MONITORING WELLS IN THE UPPER PATAPSCO SHALLOW AQUIFER

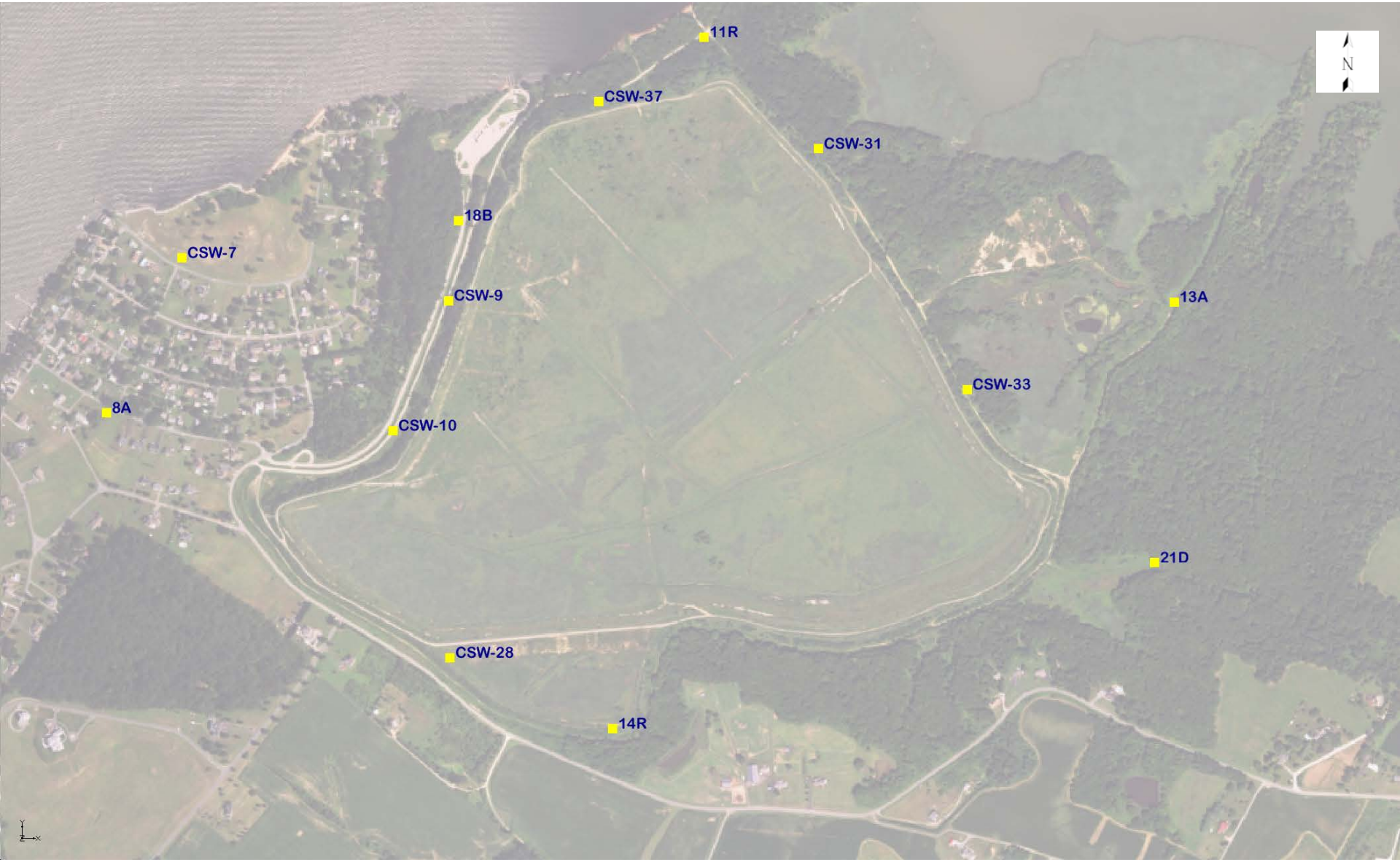
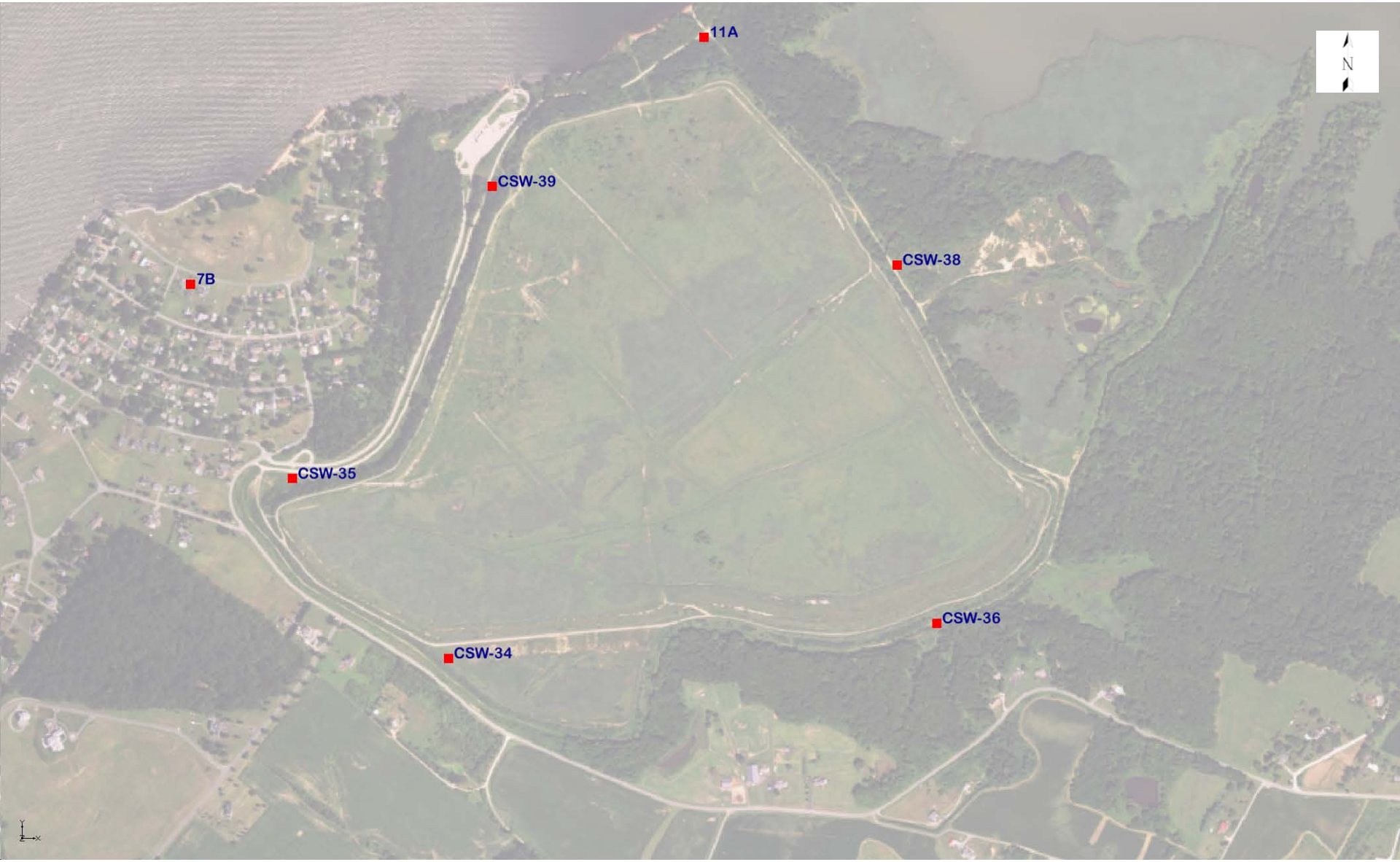


Figure 4. MONITORING WELLS IN THE UPPER PATAPSCO DEEP AQUIFER



ATTACHMENT A

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
January 3, 2018

Project Name: Pearce Creek CDF
Project No.: 112G08217
Location: Cecil Co., MD
Personnel:
Weather Conditions: Sunny, 20 degrees
Measuring Device: Solinst 101
Tidally Influenced: Yes _X_ No ___
Remarks: high tide = 0929 = = high tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-5	01/03/18	1110	46.82		43.28		3.54	Magothy
CSW-7		1057	7.74		5.96		1.78	Patap-Shallow
CSW-9		1002	30.85		27.81		3.04	Patap-Shallow
CSW-10		0954	31.91		29.44		2.47	Patap-Shallow
CSW-13		1010	17.26		10.96		6.30	Magothy
7A		1100	11.07		7.51		3.56	Magothy
7B		1016	10.78		10.70		0.08	Patap-Deep
8A		1029	25.43		23.09		2.34	Patap-Shallow
8B		1030	25.49		23.58		1.91	Magothy
11A		0936	23.51		22.22		1.29	Patap-Deep
11C		0935	23.51		22.91		0.60	Magothy
11R		0935	23.43		22.15		1.28	Patap-Shallow
12R		0946	39.48		35.43		4.05	Magothy
13A		1012	19.35		17.32		2.03	Patap-Shallow
14R		0947	39.36		36.39		2.97	Patap-Shallow
16A		1007	24.18		20.71		3.47	Magothy
18B		1004	30.10		27.50		2.60	Patap-Shallow
21S		1003	23.93		18.35		5.58	Magothy
21D		1002	23.53		21.32		2.21	Patap-Shallow
CSW-27		0941	35.26		31.63		3.63	Magothy
CSW-28		0940	35.23		32.24		2.99	Patap-Shallow
CSW-29		0858	31.20		27.74		3.46	Magothy
CSW-31		1031	23.90		21.94		1.96	Patap-Shallow
CSW-32		1022	25.49		18.52		6.97	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
January 3, 2018

Project Name:	Pearce Creek CDF	**Project No.:**	112G08217
Location:	Cecil Co., MD	**Personnel:**	
Weather Conditions:	Sunny, 20 degrees	**Measuring Device:**	Solinst 101
Tidally Influenced:	Yes _X_ No ___	**Remarks:**	high tide = 0929 = = high tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-33		1023	25.45		23.69		1.76	Patap-Shallow
CSW-34		0939	35.47		33.63		1.84	Patap-Deep
CSW-35		0949	27.82		28.30		-0.48	Patap-Deep
CSW-36		0955	24.13		21.91		2.22	Patap-Deep
CSW-37		0941	21.84		20.81		1.03	Patap-Shallow
CSW-38		1027	26.16		24.73		1.43	Patap-Deep
CSW-39		0944	30.89		30.25		0.64	Patap-Deep
PZ-1		0940	22.51		22.73		-0.22	Magothy
PZ-2		1026	25.45		18.39		7.06	Magothy
PZ-3		1018	23.87		17.58		6.29	Magothy
PZ-4		0957	24.20		19.34		4.86	Magothy
PZ-5		0951	42.62		38.21		4.41	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
March 28, 2018

Project Name: Pearce Creek CDF
Project No.: 112G08217
Location: Cecil Co., MD
Personnel:
Weather Conditions: Cloudy, 42 degrees
Measuring Device: Solinst 101
Tidally Influenced: Yes _X_ No ___
Remarks: high tide = 0728 = = falling tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-5	03/28/18	1130	46.82		41.40		5.42	Magothy
CSW-7		0940	7.74		4.85		2.89	Patap-Shallow
CSW-9		0905	30.85		26.99		3.86	Patap-Shallow
CSW-10		0908	31.91		28.58		3.33	Patap-Shallow
CSW-13		0910	17.26		9.00		8.26	Magothy
7A		0930	11.07		6.28		4.79	Magothy
7B		0931	10.78		9.65		1.13	Patap-Deep
8A		0922	25.43		22.10		3.33	Patap-Shallow
8B		0922	25.49		22.73		2.76	Magothy
11A		0855	23.51		21.21		2.30	Patap-Deep
11C		0855	23.51		21.64		1.87	Magothy
11R		0854	23.43		20.94		2.49	Patap-Shallow
12R		0937	39.48		34.35		5.13	Magothy
13A		0909	19.35		16.55		2.80	Patap-Shallow
14R		0938	39.36		35.00		4.36	Patap-Shallow
16A		0918	24.18		20.13		4.05	Magothy
18B		0915	30.10		26.80		3.30	Patap-Shallow
21S		0918	23.93		16.35		7.58	Magothy
21D		0921	23.53		20.04		3.49	Patap-Shallow
CSW-27		0950	35.26		30.58		4.68	Magothy
CSW-28		0953	35.23		31.16		4.07	Patap-Shallow
CSW-29		0908	31.20		27.20		4.00	Magothy
CSW-31		0852	23.90		21.00		2.90	Patap-Shallow
CSW-32		0857	25.49		17.04		8.45	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
March 28, 2018

Project Name: Pearce Creek CDF
Project No.: 112G08217
Location: Cecil Co., MD
Personnel:
Weather Conditions: Cloudy, 42 degrees
Measuring Device: Solinst 101
Tidally Influenced: Yes _X_ No ___
Remarks: high tide = 0728 = = falling tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-33		0859	25.45		22.70		2.75	Patap-Shallow
CSW-34		0955	35.47		32.57		2.90	Patap-Deep
CSW-35		0940	27.82		27.52		0.30	Patap-Deep
CSW-36		0928	24.13		20.63		3.50	Patap-Deep
CSW-37		0857	21.84		19.64		2.20	Patap-Shallow
CSW-38		0850	26.16		23.87		2.29	Patap-Deep
CSW-39		0901	30.89		29.77		1.12	Patap-Deep
PZ-1		0858	22.51		21.05		1.46	Magothy
PZ-2		0852	25.45		17.76		7.69	Magothy
PZ-3		0902	23.87		15.55		8.32	Magothy
PZ-4		0929	24.20		17.68		6.52	Magothy
PZ-5		0932	42.62		36.08		6.54	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
June 7, 2018

Project Name: Pearce Creek CDF
Project No.: 112G08591
Location: Cecil Co., MD
Personnel: D. Whalen & C. Sinisi
Weather Conditions: Cloudy, 72 degrees
Measuring Device: Solinst 101
Tidally Influenced: Yes _X_ No ___
Remarks: low tide = 1050 = = rising tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-5	06/07/18	1515	46.82		41.03		5.79	Magothy
CSW-7		1050	7.74		4.67		3.07	Patap-Shallow
CSW-9		1305	30.85		26.44		4.41	Patap-Shallow
CSW-10		1302	31.91		28.04		3.87	Patap-Shallow
CSW-13		1324	17.26		9.41		7.85	Magothy
7A		1056	11.07		6.26		4.81	Magothy
7B		1055	10.78		9.44		1.34	Patap-Deep
8A		1105	25.43		21.72		3.71	Patap-Shallow
8B		1108	25.49		21.88		3.61	Magothy
11A		1036	23.51		20.97		2.54	Patap-Deep
11C		1033	23.51		21.31		2.20	Magothy
11R		1035	23.43		21.04		2.39	Patap-Shallow
12R		1400	39.48		33.62		5.86	Magothy
13A		1326	19.35		16.01		3.34	Patap-Shallow
14R		1403	39.36		34.46		4.90	Patap-Shallow
16A		1111	24.18		19.41		4.77	Magothy
18B		1120	30.10		26.20		3.90	Patap-Shallow
21S		1344	23.93		16.57		7.36	Magothy
21D		1342	23.53		19.45		4.08	Patap-Shallow
CSW-27		1405	35.26		30.02		5.24	Magothy
CSW-28		1407	35.23		30.62		4.61	Patap-Shallow
CSW-29		1300	31.20		26.55		4.65	Magothy
CSW-31		1311	23.90		20.62		3.28	Patap-Shallow
CSW-32		1318	25.49		17.06		8.43	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
June 7, 2018

Project Name:	Pearce Creek CDF	**Project No.:**	112G08591
Location:	Cecil Co., MD	**Personnel:**	D. Whalen & C. Sinisi
Weather Conditions:	Cloudy, 72 degrees	**Measuring Device:**	Solinst 101
Tidally Influenced:	Yes _X_ No ___	**Remarks:**	low tide = 1050 = = rising tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-33		1319	25.45		22.10		3.35	Patap-Shallow
CSW-34		1408	35.47		31.96		3.51	Patap-Deep
CSW-35		1114	27.82		27.11		0.71	Patap-Deep
CSW-36		1315	24.13		19.97		4.16	Patap-Deep
CSW-37		1042	21.84		19.52		2.32	Patap-Shallow
CSW-38		1350	26.16		23.36		2.80	Patap-Deep
CSW-39		1308	30.89		29.35		1.54	Patap-Deep
PZ-1		1041	22.51		21.35		1.16	Magothy
PZ-2		1315	25.45		17.24		8.21	Magothy
PZ-3		1329	23.87		15.72		8.15	Magothy
PZ-4		1349	24.20		17.40		6.80	Magothy
PZ-5		1357	42.62		35.69		6.93	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
October 18, 2018

Project Name:	Pearce Creek CDF	**Project No.:**	112G08591
Location:	Cecil Co., MD	**Personnel:**	D. Whalen & C. Sinisi
Weather Conditions:	Sunny, 50 degrees	**Measuring Device:**	Solinst 101
Tidally Influenced:	Yes _X_ No ___	**Remarks:**	low tide = 1240: falling to low tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-5	10/18/18	0943	46.82		42.25		4.57	Magothy
CSW-7		1000	7.74		5.62		2.12	Patap-Shallow
CSW-9		0910	30.85		26.82		4.03	Patap-Shallow
CSW-10		0918	31.91		28.44		3.47	Patap-Shallow
CSW-13		0938	17.26		11.03		6.23	Magothy
7A		0955	11.07		6.76		4.31	Magothy
7B		0958	10.78		10.11		0.67	Patap-Deep
8A		1010	25.43		22.34		3.09	Patap-Shallow
8B		1012	25.49		22.28		3.21	Magothy
11A		0904	23.51		21.72		1.79	Patap-Deep
11C		0903	23.51		21.85		1.66	Magothy
11R		0902	23.43		21.97		1.46	Patap-Shallow
12R		1028	39.48		34.19		5.29	Magothy
13A		0941	19.35		16.42		2.93	Patap-Shallow
14R		1029	39.36		35.31		4.05	Patap-Shallow
16A		0925	24.18		19.59		4.59	Magothy
18B		0936	30.10		26.45		3.65	Patap-Shallow
21S		0947	23.93		18.08		5.85	Magothy
21D		0949	23.53		20.37		3.16	Patap-Shallow
CSW-27		1019	35.26		30.56		4.70	Magothy
CSW-28		1018	35.23		31.16		4.07	Patap-Shallow
CSW-29		0916	31.20		26.74		4.46	Magothy
CSW-31		0909	23.90		21.00		2.90	Patap-Shallow
CSW-32		0923	25.49		18.58		6.91	Magothy

Tetra Tech

GROUNDWATER LEVEL MEASUREMENT SHEET
October 18, 2018

Project Name:	Pearce Creek CDF	**Project No.:**	112G08591
Location:	Cecil Co., MD	**Personnel:**	D. Whalen & C. Sinisi
Weather Conditions:	Sunny, 50 degrees	**Measuring Device:**	Solinst 101
Tidally Influenced:	Yes _X_ No ___	**Remarks:**	low tide = 1240: falling to low tide event

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*		Groundwater Elevation (feet)*	Aquifer
CSW-33		0927	25.45		22.72		2.73	Patap-Shallow
CSW-34		1015	35.47		32.47		3.00	Patap-Deep
CSW-35		0922	27.82		27.32		0.50	Patap-Deep
CSW-36		0958	24.13		20.74		3.39	Patap-Deep
CSW-37		0902	21.84		20.32		1.52	Patap-Shallow
CSW-38		0915	26.16		23.83		2.33	Patap-Deep
CSW-39		0907	30.89		29.76		1.13	Patap-Deep
PZ-1		0900	22.51		22.66		-0.15	Magothy
PZ-2		0916	25.45		17.94		7.51	Magothy
PZ-3		0932	23.87		17.34		6.53	Magothy
PZ-4		0957	24.20		18.67		5.53	Magothy
PZ-5		1006	42.62		36.84		5.78	Magothy

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LEGEND

- MONITORING WELL
- 3.75 GROUNDWATER ELEVATION (FEET, MSL)
- 4.0 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

ELK RIVER

PEARCE CREEK

11C 1.87

1.46 PZ-1

7.69 PZ-2

8.26 CSW-13

8.45 CSW-32

8.32 PZ-3

7.58 21S

6.54 PZ-5

6.52 PZ-4

5.42 CSW-5

4.79 7A

8B 2.76

4.05 16A

CSW-29 4.00

4.68 CSW-27

12R 5.13

BASIN ROAD

SHORT STREET

CIRCLE DRIVE

LOW STREET

MIDWAY DRIVE

SOUTH DRIVE

OLD BARN LANE

MARYLAND DRIVE

WICKWIRE DRIVE

POND CREEK LANE

POND NECK ROAD

2.0 3.0 4.0 5.0 6.0 7.0 8.0

N

0 500 1,000

SCALE IN FEET

TETRA TECH

GROUNDWATER ELEVATIONS
MAGOTHY AQUIFER
NEAR HIGH TIDE
MARCH 28, 2018
CONFINED DISPOSAL FACILITY
GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

FILE	SCALE
112G08217GM04-3	AS NOTED
	REV 0 / DATE 4/13/18

C:\All_Projects\112G08217\07\112G08217GM04.DWG MKB 4/13/18

LEGEND

- MONITORING WELL
- 1.85 GROUNDWATER ELEVATION (FEET, MSL)
- 2.0 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

N

ELK RIVER

PEARCE CREEK

2.49 11R

2.20 CSW-37

2.90 CSW-31

2.80 13A

2.75 CSW-33

3.30 18B

3.86 CSW-9

2.89 CSW-7

8A 3.33

3.33 CSW-10

21D 3.49

CSW-28 4.07

4.36 14R

2.5

3.0

3.5

4.0

BASIN ROAD

SHOAL STREET

CIRCLE DRIVE

LOW STREET

MIDWAY DRIVE

SOUTH DRIVE

OLD BARN LANE

MARYLAND DRIVE

WICKWIRE DRIVE

POND CREEK LANE

POND NECK ROAD

0 500 1,000

SCALE IN FEET

TETRA TECH

GROUNDWATER ELEVATIONS
UPPER PATAPSCO SHALLOW AQUIFER
NEAR HIGH TIDE
MARCH 28, 2018
CONFINED DISPOSAL FACILITY
GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

FILE	SCALE
112G08217GM04-1	AS NOTED
	REV 0 / DATE 4/13/18

C:\All_Projects\112G08217\07\112G08217GM04.DWG MKB 4/13/18

LEGEND

- MONITORING WELL
- 1.67 GROUNDWATER ELEVATION (FEET, MSL)
- 2.0 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

ELK RIVER

PEARCE CREEK

11A 2.30

CSW-39 1.12

CSW-38 2.29

7B 1.13

CSW-35 0.30

CSW-34 2.90

CSW-36 3.50

BASIN ROAD

SHORT STREET

CIRCLE DRIVE

COW STREET

MIDWAY DRIVE

SOUTH DRIVE

OLD BARN LANE

MARYLAND DRIVE

WICKWIRE DRIVE

POND CREEK LANE

POND NECK ROAD

2.0 1.0 2.0 1.0 2.0 1.0 2.0 3.0

N

0 500 1,000

SCALE IN FEET

TETRA TECH

GROUNDWATER ELEVATIONS
UPPER PATAPSCO DEEP AQUIFER
NEAR HIGH TIDE
MARCH 28, 2018
CONFINED DISPOSAL FACILITY
GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

FILE	SCALE
112G08217GM04-2	AS NOTED
	REV 0 / DATE 4/13/18

C:\AIL_Projects\112G08591\04\112G08591GM01.DWG MKB 11/26/18

LEGEND

- MONITORING WELL
- 3.75 GROUNDWATER ELEVATION (FEET, MSL)
- 4.0 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

ELK RIVER

PEARCE CREEK

N

11C 1.66

-0.15 PZ-1

7.51 PZ-2

6.23 CSW-13

6.91 CSW-32

6.53 PZ-3

5.85 21S

7A 4.31

3.21 8B

4.59 16A

CSW-23 4.46

4.70 CSW-27

PZ-5 5.78

PZ-4 5.53

5.29 12R

5.79 CSW-5

BASIN ROAD

SHORT STREET

CIRCLE DRIVE

LOW STREET

MIDWAY DRIVE

SOUTH DRIVE

OLD BARN LANE

MARYLAND DRIVE

POND NECK ROAD

WICKWIRE DRIVE

POND CREEK LANE

0 500 1,000

SCALE IN FEET

TETRA TECH

GROUNDWATER ELEVATIONS
MAGOTHY AQUIFER
LOW TIDE
OCTOBER 18, 2018
CONFINED DISPOSAL FACILITY
GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

FILE	SCALE
112G08591GM01-3	AS NOTED
	REV 0 / DATE 11/26/18

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LEGEND

- MONITORING WELL
- 3.65 GROUNDWATER ELEVATION (FEET, MSL)
- 2.0 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

N

ELK RIVER

PEARCE CREEK

1.46
11R

1.52
CSW-37

2.90
CSW-31

3.65
18B

CSW-7
2.12

4.03
CSW-9

2.93
13A

2.73
CSW-33

8A
3.09

CSW-10
3.47

21D
3.16

CSW-28
4.07

4.05
14R

BASIN ROAD
SHORT STREET
CIRCLE DRIVE
LOW STREET
MIDWAY DRIVE
SOUTH DRIVE
OLD BARN LANE
MARYLAND DRIVE
WICKWIRE DRIVE
POND CREEK LANE
POND NECK ROAD

2
3
4

0 500 1,000
SCALE IN FEET

TETRA TECH

GROUNDWATER ELEVATIONS
UPPER PATAPSCO SHALLOW AQUIFER
LOW TIDE
OCTOBER 18, 2018
CONFINED DISPOSAL FACILITY
GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

FILE	SCALE
112G08591GM01-1	AS NOTED
	REV 0 / DATE 11/26/18

C:\AIL_Projects\112G08591\04\112G08591GM01.DWG MKB 11/26/18

LEGEND

- MONITORING WELL
- 1.67 GROUNDWATER ELEVATION (FEET, MSL)
- 2.0 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

N

ELK RIVER

PEARCE CREEK

1.79
11A

1.13
CSW-39

2.33
CSW-38

0.67
YB

0.50
CSW-35

3.00
CSW-34

3.39
CSW-36

BASIN ROAD
SHORT STREET
CIRCLE DRIVE
COW STREET
MIDWAY DRIVE
SOUTH DRIVE
OLD BARN LANE
MARYLAND DRIVE
WICKWIRE DRIVE
POND CREEK LANE
POND NECK ROAD

0 500 1,000
SCALE IN FEET

TETRA TECH

GROUNDWATER ELEVATIONS
UPPER PATAPSCO DEEP AQUIFER
LOW TIDE
OCTOBER 18, 2018
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GROUNDWATER MONITORING PROGRAM
CECIL COUNTY, MARYLAND

FILE	SCALE
112G08591GM01-2	AS NOTED
	REV 0 / DATE 11/26/18