



**US Army Corps of
Engineers**
Philadelphia District

PEARCE CREEK ANNUAL REPORT

PEARCE CREEK CONFINED DISPOSAL FACILITY EARLEVILLE, MD 21919

Prepared For:
The Maryland Department of the Environment

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Date: 01 February 2023

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1.0 INTRODUCTION

This Annual Summary Report was prepared 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 2022 Annual Summary Report summarizes the continued groundwater sampling of the network of 36 monitoring wells around the CDF.

Placement of dredge material into the CDF:

Year	Start Date	End Date
FY 18	December 2017	February 2018
FY 19	December 2018	January 2019
FY 20	December 2019	February 2020
FY 21	November 2020	December 2020
FY 22	February 2022	March 2022
FY 23	September 2022	March 2023

2.0 FIELD WORK

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

Following the well installation in 2017, the groundwater monitoring network is comprised of 36 monitoring wells. 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. In Attachment B, 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 Summary Report show the vast amount of thick clay and silt units in the subsurface separating generally thinner, inter-fingered, laterally discontinuous water-bearing sands.

2.1 Groundwater Elevation Monitoring

To evaluate potential local seasonal variations in groundwater elevation and flow direction and 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 May 12, 2022, and August 29, 2022, as part of the semi-annual sampling event. Water levels 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 C. Groundwater elevation contour maps were generated for the Magothy, the Upper Patapsco-Shallow, and the Upper Patapsco-Deep aquifers for both May and August 2022 measurements. These figures are also included in Attachment C and show that groundwater flow in each aquifer was relatively consistent throughout the year and was similar to previous groundwater flow maps generated in the 2017 – 2021 annual reports. 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 completed in May 2022, and the second round of sampling was conducted in August and September 2022. Groundwater sampling was performed by personnel from the USACE Philadelphia. Monitoring well locations are shown in Attachment B, Figures 1 through 4, and construction details (depths, screened intervals, and aquifer) of these wells are specified in Attachment A, Table 1.

Groundwater sampling was conducted using standard U.S. Environmental Protection Agency (EPA) low stress (low flow) guidelines (<https://www.epa.gov/quality/low-stress-low-flow-purging-and-sampling-procedure-collection-groundwater-samples-monitoring>). 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

Samples collected during both events were immediately placed in ice-filled coolers and shipped overnight via FedEx under chain-of-custody protocols. The samples were shipped to the USACE Engineer Research Development Center (ERDC) in Vicksburg, Mississippi for analysis of metals and general chemistry parameters and Pace National in Mt. Juliet, Tennessee for analysis of radiological parameters. Pace National is certified by the State of Maryland.

3.0 LABORATORY ANALYSIS AND GROUNDWATER SAMPLING RESULTS

In Attachment A, Tables 2 and 3 summarize the results for the 2022 spring and fall sampling events, respectively. Attachment A, Table 4 presents historical results from the 2017 – 2022 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 current network of wells will continue to be sampled as part of the GWMP (a total of 36 monitor wells and piezometers), pending guidance from MDE. Groundwater sampling could possibly be lessened to once a year, as opposed to two events.
- 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 in 2022 and 2023 is scheduled to occur from September 2022 through March 2023.
- The USACE will develop a database for the project which in the future will allow better evaluation of groundwater chemistry changes over time.
- The eighth annual report will be submitted in February 2024. This report will include 2023 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.

ATTACHMENT A - TABLES

Table 1.
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 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	7A	7B	8A	8B	11A	11C	11R
Duplicate of:								
Date Sampled:	⁽¹⁾	5/4/2022	5/4/2022	5/4/2022	5/4/2022	5/5/2022	5/5/2022	5/5/2022
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.0640	0.0080 U	1.34	0.934	0.0431	2.58	0.275
Arsenic	0.01	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0017 J	0.0019 J	0.0004 U	0.0026	0.0004 U
Cadmium	0.005	0.0004 U	0.0004 U	0.0007 J	0.0009 J	0.0004 U	0.0004 U	0.0004 U
Calcium	NS	5.29	15.3	43.5	30.6	9.00	25.9	7.36
Iron	0.30	13.8	17.3	1.97	0.0333 J	8.90	15.6	17.3
Lead	0.015	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Magnesium	NS	1.95	3.00	22.9	25.0	1.81	16.1	1.55
Manganese	0.05	0.191	0.136	11.9	4.64	0.0975	7.24	0.124
Nickel ⁽²⁾	0.073	0.0004 J	0.0005 J	0.0330	0.0255	0.0004 U	0.0766	0.0004 U
Potassium	NS	1.14	8.08	4.40	3.94	8.94	3.61	1.63
Sodium	NS	9.25	19.5	55.4	194	21.1	17.1	7.94
Zinc	5	0.0025	0.0042	0.0190	0.0231	0.0043	0.0659	0.0038
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.100 U	0.130 J	0.204 J	0.207 J	0.100 U	0.128 J	0.100 U
Chloride	250	8.68	31.8	69.6	274	13.8	10.5	3.44
Fluoride	2	0.100 U	0.100 U	0.476	0.222 J	0.100 U	0.351	0.100 U
Sulfate	250	8.02	22.4	251	197	10.4	95.0	10.4
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	4.21	0.0300 U	0.251	9.62	0.0300 U	0.509	0.0300 U
Nitrogen, Nitrite	1	0.0300 U	0.0300 U	0.0300 U	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Nitrogen, Nitrate+Nitrite	10	4.21	0.0600 U	0.251	9.62	0.0600 U	0.509	0.0600 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	0.0735 U	1.73	8.08	2.17	2.54	1.83	2.89
Gross Beta ⁽³⁾	50	1.35 J	10.9	17.0	9.46	12.0	7.07	7.45
Radium-226 ⁽⁴⁾	5	0.193	0.644	1.25	0.884	0.591	0.280	0.724
Radium-228 ⁽⁴⁾	5	0.561	1.19	6.81	2.95	0.647	1.28	1.05
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5.00 UJ	18.4	5.00 UJ	5.00 UJ	42.1	66.5	29.0
Total Dissolved Solids	500	117	171	596	922	127	359	86.0
Total Suspended Solids	NS	9.00 J	9.00	0.400 J	0.400 U	4.80	17.3	12.0

Table 2
Spring 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	12R	13A	14R	16A	18B	21D	21S
Duplicate of:								
Date Sampled:	⁽¹⁾	5/11/2022	5/3/2022	5/11/2022	5/2/2022	5/2/2022	5/11/2022	5/11/2022
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.346	2.91	8.38	0.0154 J	0.0080 U	1.83	40.8
Arsenic	0.01	0.0010 U	0.0010	0.0043	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0021	0.0004 U	0.0004 U	0.0004 U	0.0035
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0037
Calcium	NS	619	18.6	188	56.4	44.6	38.4	175
Iron	0.30	24.1	4.79	324	13.3	25.3	1.39	244
Lead	0.015	0.0005 J	0.0017 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	575 U
Magnesium	NS	54.9	2.63	181	37.6	2.56	0.208	178
Manganese	0.05	16.6	0.0632	146	21.7	0.174	0.0384 J	138
Nickel ⁽²⁾	0.073	0.0498	0.0023	0.357	0.0065	0.0015 J	0.0019 J	0.256
Potassium	NS	10.7	17.0	17.9	9.50	1.75	20.8	10.8
Sodium	NS	392	15.6	307	33.3	7.21	53.7	330
Zinc	5	0.0514	0.0149	0.101	0.0080	0.0056	0.0037	0.0372
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	4.61	0.100 U	2.03	0.269 J	0.100 U	0.200 U	2.19
Chloride	250	837	2.34 J	404	13.9	3.92	23.7	394
Fluoride	2	0.200 U	0.105 J	0.512 J	0.100 U	0.100 U	0.228 J	0.329 J
Sulfate	250	457	10.6	2740	331 J	1 UJ	38.7	2440
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.705	0.0300 U	0.0600 U	0.0300 U	0.0300 U	0.0600 U	0.0600 U
Nitrogen, Nitrite	1	0.525	0.0300 U	0.0600 U	0.0300 U	0.0300 U	0.0600 U	0.0600 U
Nitrogen, Nitrate+Nitrite	10	1.23	0.0600 U	0.120 U	0.0600 U	0.0600 U	0.120 U	0.120 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	6.11 J	1.91	1.54 U	1.51	1.06	0.551 J	14.4
Gross Beta ⁽³⁾	50	15.9 J	19.9	38.8	10.6	3.95	20.8	24.1
Radium-226 ⁽⁴⁾	5	0.339 J	0.973	3.56	0.0442 U	0.138 J	0.219 J	3.72
Radium-228 ⁽⁴⁾	5	0.0884 U	0.621	11.2	1.05	1.14	0.141 U	9.76
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	386	97.8	6.03 J	153	153	166	5.00 UJ
Total Dissolved Solids	500	4160	150	4550	202	202	331	4760
Total Suspended Solids	NS	58.6	48.3	2.00 J	50	50	15.0	1.00 J

Table 2
Spring 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	CSW-5	CSW-7	CSW-9	CSW-10	CSW-13	DUP-1	CSW-27
Duplicate of:							CSW-13	
Date Sampled:	⁽¹⁾	5/10/2022	5/4/2022	5/2/2022	5/10/2022	5/3/2022	5/3/2022	5/5/2022
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.0080 U	0.445	0.0199 J	36.1	1.43	1.44	1.12
Arsenic	0.01	0.0010 U	0.0015 J	0.0010 U	0.0010 U	0.0013 J	0.0015 J	0.0026
Beryllium	0.004	0.0004 U	0.0092	0.0055	0.0107	0.0028	0.0026	0.0008 J
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0031	0.0004 U	0.0004 U	0.0016 J
Calcium	NS	170 J	229	259	248	17.1	17.4	83.5
Iron	0.30	486	254	611	420	56.2	57.1	147
Lead	0.015	0.0004 U	0.0004 U	0.0004 U	0.0029	0.0004 U	0.0004 U	0.0004 U
Magnesium	NS	169	199	209	230	12.3	12.5	84.6
Manganese	0.05	119	161	170	191	1.96	1.99	53.7
Nickel ⁽²⁾	0.073	0.0963	0.766	0.429	0.315	0.0433	0.0429	0.146
Potassium	NS	14.5	10.6	14.0	18.5	2.22	2.26	12.3
Sodium	NS	301	327	368	458	43.0	43.7	153
Zinc	5	0.101	0.0374	0.0203	0.0421	0.19	0.188	0.242
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	1.83	2.02	2.43	2.58	0.214 J	0.239 J	1.38
Chloride	250	320	477	562	617	66.0	66.6	202
Fluoride	2	0.200 U	0.184 J	0.100 U	1.35	0.100 U	0.100 U	0.157 J
Sulfate	250	1410	2330	3040 J	1720	161	161	1170
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.0600 U	0.0300 U	0.0300 U	0.0600 U	0.0300 U	0.0300 U	0.0300 U
Nitrogen, Nitrite	1	0.0600 U	0.0300 U	0.0300 U	0.0600 U	0.0300 U	0.0300 U	0.0300 U
Nitrogen, Nitrate+Nitrite	10	0.120 U	0.0600 U	0.0600 U	0.120 U	0.0600 U	0.0600 U	0.0600 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	19.0	1.46 J	5.11 J	30.3	0.823	3.36	1.83 U
Gross Beta ⁽³⁾	50	31.3	27.3	19.4	61.1	6.07	5.87	23.2
Radium-226 ⁽⁴⁾	5	0.603	1.79	0.872	2.47	1.15	1.63	0.358
Radium-228 ⁽⁴⁾	5	1.86	3.23	1.70	17.7	0.589 J	1.59	2.59
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	81.4	5.00 UJ	23.7	5.00 UJ	6.33 J	7.69 J	40.5
Total Dissolved Solids	500	4680	4160	6000	6160	585	552	2030
Total Suspended Solids	NS	39.0	16.0	18.0	1.00 J	2.80	2.40	4.00

Table 2
Spring 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	CSW-28	CSW-29	CSW-31	CSW-32	CSW-33	CSW-34	CSW-35
Duplicate of:								
Date Sampled:	⁽¹⁾	5/5/2022	5/10/2022	5/10/2022	5/3/2022	5/3/2022	5/5/2022	5/2/2022
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	20.8	0.0218 J	0.0447	0.0080 U	0.0706	0.575	0.200
Arsenic	0.01	0.0012 J	0.0101	0.0010 U	0.001 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0039	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	239	66.0	13.9	161	26.2	39.2	339
Iron	0.30	425	89.1	22.7	604	6.17	3.09	0.0800
Lead	0.015	0.0007 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Magnesium	NS	234	53.7	1.90	86.8	2.95	0.568	0.0896
Manganese	0.05	181	38.8	0.177	8.03	0.121	0.0706	0.0246 J
Nickel ⁽²⁾	0.073	0.438	0.0131	0.00082 J	0.0045	0.0014 J	0.0032	0.0204
Potassium	NS	18.9	11.5	1.82	5.61	3.22	8.74	36.7
Sodium	NS	457	65.7	5.50	162	9.48	18.4	74.5
Zinc	5	0.0416	0.0089	0.0069	0.0049	0.0064	0.0055	0.0250
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	3.08	0.676	0.200 U	0.968	0.100 U	0.148 J	1.14
Chloride	250	811 J	30.0	4.13 J	230	4.32	14.1	161
Fluoride	2	0.797	0.200 U	0.200 U	0.100 U	0.100 U	0.100 U	0.107 J
Sulfate	250	2360	428	3.17 J	2030 J	9.94	11.5	23.3 J
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.0300 U	0.0600 U	0.0600 U	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Nitrogen, Nitrite	1	0.0300 U	0.0600 U	0.0600 U	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Nitrogen, Nitrate+Nitrite	10	0.0600 U	0.120 U	0.120 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	22.4	3.58 J	2.10	1.56 U	3.44	3.77	1.29 J
Gross Beta ⁽³⁾	50	42.3	12.7	5.96	5.42 J	6.56	8.99	28.7
Radium-226 ⁽⁴⁾	5	2.28	0.428	0.533	0.492	0.787	0.283	1.47
Radium-228 ⁽⁴⁾	5	4.09	1.16	0.679	1.09	0.770	0.278 J	1.50
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5.00 U	204	60.4	5.53 J	85.6	93.5	849
Total Dissolved Solids	500	5680	997	93.3	3480	128	177	1190
Total Suspended Solids	NS	177	79.0	28.7	76	14.00	11.0	0.800 U

Table 2
Spring 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	CSW-36	CSW-37	CSW-38	CSW-39	PZ-1	DUP-2	PZ-2
Duplicate of:							PZ-1	
Date Sampled:	⁽¹⁾	5/3/2022	5/4/2022	5/10/2022	5/2/2022	5/4/2022	5/4/2022	5/10/2022
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.0688	0.0117 J	0.540	0.304	0.0080 U	0.0080 U	0.0080 U
Arsenic	0.01	0.0013 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0042
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	230	9.61	78.0	110	180	178	21.5
Iron	0.30	0.557	23.5	0.201	0.723	115	114	53.8
Lead	0.015	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Magnesium	NS	0.425	2.25	0.314	0.485	205	203	10.4
Manganese	0.05	0.0346 J	0.175	0.008 U	0.023 J	27.7	27.7	1.25
Nickel ⁽²⁾	0.073	0.0204	0.0004 J	0.0057	0.0072	0.0071	0.0073	0.005
Potassium	NS	12.3	2.10	5.42	14.5	26.1	25.7	1.74
Sodium	NS	30.2	18.5	36.6	79.7	411	399	52.8
Zinc	5	0.0116	0.0036	0.0029	0.0068	0.0031	0.0032	0.0074
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.894	0.186 J	0.423 J	0.862	3.63	3.50	0.312 J
Chloride	250	72.5	24.2	37.8	135	592	575	25.2
Fluoride	2	0.100 U	0.100 U	0.200 U	0.101 J	0.165 J	0.164 J	0.200 U
Sulfate	250	47.7	1.00 U	61.4	8.24 J	1090	1090	113
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.0300 U	0.0300 U	0.0600 U	0.0300 U	0.0300 U	0.0300 U	0.0600 U
Nitrogen, Nitrite	1	0.0300 U	0.0600 U	0.0600 U	0.0300 U	0.0300 U	0.0300 U	0.0600 U
Nitrogen, Nitrate+Nitrite	10	0.0600 U	0.0300 U	0.120 U	0.0600 U	0.0600 U	0.0600 U	0.120 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	1.26 J	1.55	0.649 J	1.86 J	-0.815 U	0.000 U	5.27
Gross Beta ⁽³⁾	50	12.1	5.57	5.32	8.90	25.6	25.9	4.80
Radium-226 ⁽⁴⁾	5	0.812	0.893	0.217	0.559	0.238	0.557	0.872
Radium-228 ⁽⁴⁾	5	0.847	1.24	0.00 U	1.09	1.38	1.28	1.33
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	482	5.00 UJ	147	227	229	215	84.0
Total Dissolved Solids	500	841	130	340	555	3320	3150	338
Total Suspended Solids	NS	20.8	9.50	8.00	13	133	120	68.0

Table 2
Spring 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-3	DUP-3	PZ-4	RB-051022	
Duplicate of:	SMCL		PZ-3			
Date Sampled:	⁽¹⁾	5/11/2022	5/11/2022	5/3/2022	5/10/2022	
Total Inorganics		mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	10.9	10.8	15.3	0.0080	U
Arsenic	0.01	0.0010	0.0010	0.0010	0.0010	U
Beryllium	0.004	0.0041	0.0041	0.0141	0.0004	U
Cadmium	0.005	0.0015	0.0015	0.0004	0.0004	U
Calcium	NS	109	109	116	0.0552	
Iron	0.30	177	176	146	0.0555	
Lead	0.015	0.0004	0.0004	0.0004	0.0004	U
Magnesium	NS	96.8	96.0	86.1	0.0125	J
Manganese	0.05	79.8	79.4	50.4	0.0187	J
Nickel ⁽²⁾	0.073	0.192	0.188	0.203	0.0017	J
Potassium	NS	9.45	9.44	6.94	0.0454	J
Sodium	NS	193	193	133	0.180	
Zinc	5	0.0457	0.0455	0.339	0.002	J
Anions		mg/L	mg/L	mg/L	mg/L	
Bromide	NS	1.52	1.49	0.799	0.200	U
Chloride	250	207	205	164	2.00	U
Fluoride	2	0.416	0.399	0.853	0.200	U
Sulfate	250	1040	1030	1210	2.00	U
Nitrogen		mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	0.0600	0.0600	0.0300	0.0600	U
Nitrogen, Nitrite	1	0.0600	0.0600	0.0300	0.0600	U
Nitrogen, Nitrate+Nitrite	10	0.120	0.120	0.0600	0.120	U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha	15	2.74	3.28	7.54	-0.137	U
Gross Beta ⁽³⁾	50	20.0	12.3	18.3	-1.01	U
Radium-226 ⁽⁴⁾	5	0.673	1.25	3.10	0.120	J
Radium-228 ⁽⁴⁾	5	3.08	2.26	4.55	0.432	J
Miscellaneous		mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	9.04	5.00	5.00	5.00	U
Total Dissolved Solids	500	2520	2640	2000	4.40	U
Total Suspended Solids	NS	13.0	6.43	1.00	0.400	J

Table 2
Spring 2022 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

⁽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⁾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.

⁽⁴⁾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 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	7A	7B	8A	8B	11A	11C	11R
Duplicate of:	SMCL							
Date Sampled:	⁽¹⁾	8/31/2022	8/31/2022	8/31/2022	8/31/2022	8/30/2022	8/30/2022	8/30/2022
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.0849	0.0080 U	1.20	0.936	0.0451	4.92	0.347
Arsenic	0.01	0.0011 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0027 J	0.0020 U
Cadmium	0.005	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
Calcium	NS	5.59	15.6	44.2	33.5	8.80	49.4	6.95
Iron	0.30	15.1	17.5	1.56	0.0168 J	8.66	16.9	16.4
Lead	0.015	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
Magnesium	NS	2.17	3.03	23.0	25.5	1.81	22.7	1.57
Manganese	0.05	0.178	0.126	11.3	5.11	0.0858	10.8	0.116
Nickel ⁽²⁾	0.073	0.0020 U	0.0020 U	0.0178	0.0174	0.0020 U	0.107	0.0020 U
Potassium	NS	1.20	7.57	4.53	4.04	7.06	4.46	1.50
Sodium	NS	6.87	17.8	56.7	167	18.8	19.9	7.66
Zinc	5	0.0020 U	0.0020 U	0.158	0.129	0.0028 J	0.226	0.0024 J
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloride	250	9.02	35.5	78.2	290	15.5	19.4	3.87
Fluoride	2	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Orthophosphate as P	NS	0.200 U	0.200 U	0.200 U	0.200 U	0.0100 U	0.0100 U	0.0100 U
Sulfate	250	3.35	24.1	313	261	13.5	182	13.8
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	2.86	0.0600 U	0.465	10.6	0.00300 U	0.00300 U	0.00300 U
Nitrogen, Nitrite	1	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.00600 U	0.00300 U	0.00300 U
Nitrogen, Nitrate+Nitrite	10	2.86	0.120 U	0.465	10.6	0.00300 U	0.00600 U	0.00600 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	0.507 J	1.35	5.58	1.58 J	0.836 J	3.98	2.42
Gross Beta ⁽³⁾	50	0.223 U	6.93	14.1	6.58	7.29	6.05	2.35
Radium-226 ⁽⁴⁾	5	0.275	0.905	1.55	1.41	1.29	0.339	0.512
Radium-228 ⁽⁴⁾	5	0.547	1.27	6.68	3.04	0.450	1.11	0.486
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	18.9	42.1	5.00 U	5.00 U	49.8	84.9	25.5
Total Dissolved Solids	500	130	177	553	844	121	480	75.0
Total Suspended Solids	NS	28.0	5.00 J	5.00 J	2.00 J	7.00 J	52.0	11.0

Table 3
Fall 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	12R		13A		14R		DUP-2		16A		18B		21D		21S
Duplicate of:	SMCL							14R								
Date Sampled:	⁽¹⁾	9/1/2022		9/8/2022		8/31/2022		8/31/2022		9/7/2022		8/29/2022		9/1/2022		9/1/2022
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Aluminum	0.05	0.615		2.49		8.36		8.15		0.0096	J	0.0080	U	1.93		39.0
Arsenic	0.01	0.0020		0.0010	U	0.0045		0.0041		0.0013	J	0.0012	J	0.0010	U	0.0010
Beryllium	0.004	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020
Cadmium	0.005	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0029
Calcium	NS	616		18.0		202		204		53.4		46.9		30.2		172
Iron	0.30	23.2		5.20		333		346		14.3		25.4		1.55		248
Lead	0.015	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020
Magnesium	NS	62.8		2.86		182		182		33.6		2.58		0.277		170
Manganese	0.05	18.6		0.0671		158		154		18.1		0.142		0.0333		119
Nickel ⁽²⁾	0.073	0.0601		0.0029	J	0.245		0.227		0.0068	J	0.0020	U	0.0020	U	0.0793
Potassium	NS	11.4		16.0		19.0		18.6		9.10		1.88		19.3		10.8
Sodium	NS	417		13.0		321		307		30.9		7.34		46.6		301
Zinc	5	0.108		0.0078	J	1.59		1.55		0.0086	J	0.0020	U	0.0020	U	0.815
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Bromide	NS	6.09		2.00	U	2.26	J	2.35	J	2.00	U	2.00	U	2.00	U	2.55
Chloride	250	883		2.83	J	442		454		14.2		4.58		32.2		505
Fluoride	2	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00
Orthophosphate as P	NS	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	0.0100	U	0.200	U	0.200
Sulfate	250	702		15.1		2290		2340		371		2.00	U	43.8		2850
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Nitrogen, Nitrate	10	0.199	J	0.0600	U	0.0600	U	0.0600	U	0.0600	U	0.00300	U	0.0600	U	0.0600
Nitrogen, Nitrite	1	1.50	B	0.0600	U	0.0600	U	0.0600	U	0.0600	U	0.00300	U	0.0600	U	0.0600
Nitrogen, Nitrate+Nitrite	10	1.70		0.120	U	0.120	U	0.120	U	0.120	U	0.00600	U	0.120	U	0.120
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L
Gross Alpha	15	-2.11	U	2.59		17.3		7.62	J	0.729	J	1.38		-0.147	U	10.4
Gross Beta ⁽³⁾	50	15.2	J	17.5		24.7		25.3		6.34		1.85		14.4		18.0
Radium-226 ⁽⁴⁾	5	0.205	J	0.578		2.08		1.79		0.151	J	0.159	J	0.137	J	1.41
Radium-228 ⁽⁴⁾	5	0.273	J	1.02		8.45		8.14		1.43		0.999		0.883		9.99
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Total Alkalinity	NS	455		88.8		6.20	J	10.1		72.1		149		202		5.00
Total Dissolved Solids	500	4320		130		4220		4330		670		189		348		4360
Total Suspended Solids	NS	50.0		40.0		9.00	J	8.00	J	4.00	J	47.0		8.00	J	7.00

Table 3
Fall 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	DUP-3		CSW-5		CSW-7		CSW-9		CSW-10		CSW-13		CSW-27		DUP-1	
Duplicate of:	SMCL	21S														CSW-27	
Date Sampled:	⁽¹⁾	9/1/2022		8/29/2022		8/31/2022		9/7/2022		8/31/2022		9/8/2022		8/30/2022		8/30/2022	
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Aluminum	0.05	39.4		0.0080 U		0.533		0.0080 U		33.4		1.03		1.25		1.27	
Arsenic	0.01	0.00100	U	0.0010 U		0.0013 J		0.0010 U		0.0010 U		0.0014 J		0.0037		0.0037	
Beryllium	0.004	0.0020	U	0.0020 U		0.0020 U		0.0059 J		0.0054 J		0.0024 J		0.0020 U		0.0020 U	
Cadmium	0.005	0.0028	J	0.0020 U		0.0020 U		0.0020 U		0.0026 J		0.0020 U		0.0026 J		0.0028 U	
Calcium	NS	173		168		228		264		238		12.5		98.2		99.1	
Iron	0.30	249		482		256		633		408		39.6		155		156	
Lead	0.015	0.0020	U	0.0020 U		0.0020 U		0.0020 U		0.0029 J		0.0020 U		0.0020 U		0.0020 U	
Magnesium	NS	171		163		193		207		209		8.83		90.9		92.1	
Manganese	0.05	123		106		156		172		161		1.31		57		59.3	
Nickel ⁽²⁾	0.073	0.0869		0.142		0.0783		0.285		0.102		0.0392		0.215		0.214	
Potassium	NS	11.0		15.6		10.6		14.1		17.5		1.86		13.1		13.3	
Sodium	NS	308		299		302		357		448		33.3		170		168	
Zinc	5	0.818		0.143		3.47		0.0221		1.19		0.175		0.491		0.507	
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Bromide	NS	NA		2.05 J		2.49 J		3.40 J		3.30 J		2.00 U		2.00 U		2.00 U	
Chloride	250	NA		362		522		604		683		72.2		268		268	
Fluoride	2	NA		2.00 U		2.00		2.00 U		2.00 U		2.00 U		2.00 U		2.00 U	
Orthophosphate as P	NS	NA		0.0100 U		0.200 U		0.200 U		0.200 U		0.200 U		0.0100		0.0100 U	
Sulfate	250	NA		2030		2.00		2700		2880		145		1090		1080	
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Nitrogen, Nitrate	10	NA		0.00300 U		0.0600 U		0.0600 U		0.0600 U		0.206		0.00300 U		0.00300 U	
Nitrogen, Nitrite	1	NA		0.00300 U		0.0600 U		0.0600 U		0.0600 U		0.0600 U		0.00300 U		0.00300 U	
Nitrogen, Nitrate+Nitrite	10	NA		0.00600 U		0.120 U		0.120 U		0.120 U		0.206 J		0.00600 U		0.00600 U	
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Gross Alpha	15	11.6		-0.118 U		6.39 J		-9.74 U		42.8		3.59		6.46		3.68 J	
Gross Beta ⁽³⁾	50	20.0		0.271 J		14.9		-12.3 U		38.4		6.14		13.8		16.8	
Radium-226 ⁽⁴⁾	5	1.20		0.111 U		2.17		0.557 J		3.34		0.683		0.272		0.565	
Radium-228 ⁽⁴⁾	5	8.99		0.872		4.56		1.24		20.6		0.290 J		2.30		2.75	
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Total Alkalinity	NS	NA		46.0		51.5		5.00 U		23.8		5.40 J		52.3		52.6	
Total Dissolved Solids	500	NA		4230		3940		5840		5750		314		2190		2140	
Total Suspended Solids	NS	NA		19.0		12.0		12.0		37.0		2.00 U		14.0		13.0	

Table 3
Fall 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-28		CSW-29		CSW-31		CSW-32		CSW-33		CSW-34		CSW-35		CSW-36	
Duplicate of:	SMCL																
Date Sampled:	⁽¹⁾	8/30/2022		8/31/2022		9/7/2022		9/8/2022		9/8/2022		8/30/2022		9/7/2022		9/1/2022	
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Aluminum	0.05	14.9		0.088		0.0766		0.0080	U	0.017	J	0.284		0.311		0.0457	
Arsenic	0.01	0.0018	J	0.0115		0.0010	U	0.0010	U	0.0010	U	0.0010	U	0.0010	U	0.0010	U
Beryllium	0.004	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Cadmium	0.005	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Calcium	NS	250		69.7		12.3		157		23.1		35.7		300		203	
Iron	0.30	386		91.9		20.4		596		6.08		3.12		0.0322	J	0.332	
Lead	0.015	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Magnesium	NS	226		56.4		1.99		85.0		2.86		0.717		0.0822		0.295	
Manganese	0.05	184		38.7		0.151		7.36		0.0881		0.0817		0.0022	J	0.0161	
Nickel ⁽²⁾	0.073	0.143		0.0172		0.0020	U	0.0080	J	0.0020	U	0.0028	J	0.0242		0.0191	
Potassium	NS	20.4		12.4		1.89		5.59		3.24		6.77		32.5		10.6	
Sodium	NS	450		74.6		5.39		150		8.99		15.8		66.0		24.2	
Zinc	5	1.27		0.0149		0.0020	U	0.0086	J	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Bromide	NS	3.34		2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U
Chloride	250	743		47.4		6.02		272		9.22		19.0		162		49.4	
Fluoride	2	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U
Orthophosphate as P	NS	0.0100	U	0.200	U	0.200	U	0.200	U	0.200	U	0.0100	U	0.200	U	0.200	U
Sulfate	250	2330		597		3.98		2120		18.2		16.5		31.8		44.5	
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Nitrogen, Nitrate	10	0.00300	U	0.0662	J	0.0600	U	0.0600	U	0.468		0.00300	U	0.0600	U	0.0600	U
Nitrogen, Nitrite	1	0.00300	U	0.0600	U	0.0600	U	0.0600	U	0.0600	U	0.00300	U	0.0600	U	0.0600	U
Nitrogen, Nitrate+Nitrite	10	0.00600	U	0.120	U	0.120	U	0.120	U	0.468		0.00600	U	0.120	U	0.120	U
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Gross Alpha	15	39.9		-0.336	U	1.70		9.94		1.43		0.892	J	2.42		1.24	J
Gross Beta ⁽³⁾	50	50.1		10.9		2.88		17.9		5.14		5.52		24.0		11.0	
Radium-226 ⁽⁴⁾	5	2.42		0.557		0.410		0.462		1.01		0.370		1.23		0.660	
Radium-228 ⁽⁴⁾	5	3.68		1.35		0.859		0.254	J	0.699		0.357		2.51		1.89	
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Total Alkalinity	NS	14.5		152		44.4		20.5		70.5		91.3		672		268	
Total Dissolved Solids	500	5350		1010		94.0		3090		110		159		1110		402	
Total Suspended Solids	NS	25.0		61.0		12.0		126		2.00	U	25.0		5.00	J	68.0	

Table 3
Fall 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-37		CSW-38		CSW-39		PZ-1		PZ-2		PZ-3		PZ-4		RB-090822	
Duplicate of:	SMCL																
Date Sampled:	⁽¹⁾	8/30/2022		9/7/2022		9/7/2022		8/30/2022		9/7/2022		9/8/2022		9/1/2022		9/8/2022	
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Aluminum	0.05	0.0138	J	0.252		2.31		0.0040	U	0.0364	J	10.0		11.5		0.0080	U
Arsenic	0.01	0.0010	U	0.0010	U	0.0010	U	0.0010	U	0.0049		0.0010	U	0.0010	U	0.0010	U
Beryllium	0.004	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0030	J	0.0055	J	0.0020	U
Cadmium	0.005	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Calcium	NS	9.82		42.8		48.8		185		16.8		104		92.2		0.0706	
Iron	0.30	20.9		0.152		8.40		97.6		56.7		174		113		0.0196	J
Lead	0.015	0.0020	U	0.0020	U	0.0024	J	0.0020	U	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Magnesium	NS	2.28		0.397		3.30		194		9.01		92.3		65.8		0.0208	J
Manganese	0.05	0.160		0.0097	J	0.127		24.1		0.941		75.7		42.2		0.0059	J
Nickel ⁽²⁾	0.073	0.0020	U	0.0026	J	0.0178		0.0061	J	0.0037	J	0.111		0.0804		0.0020	U
Potassium	NS	2.05		5.45		11.4		25.1		1.50		9.27		6.92		0.0403	J
Sodium	NS	17.5		31.6		43.6		373		49.5		176		110		0.139	
Zinc	5	0.0020	U	0.0034	J	0.0161		0.0042	J	0.0021	J	0.463		0.325		0.0020	U
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Bromide	NS	2.00	U	2.00	U	2.00	U	3.75	J	2.00	U	2.00	U	2.00	U	2.00	U
Chloride	250	27.7		49.9		53.3		602		27.1		239		196		2.00	U
Fluoride	2	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U
Orthophosphate as P	NS	0.0100	U	0.200	U	0.200	U	0.0100	U	0.200	U	0.200	U	0.200	U	0.200	U
Sulfate	250	2.00	U	44.9		14.2		924		94.6		1410		1160		2.00	U
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Nitrogen, Nitrate	10	0.00300	U	0.0600	U	0.0600	U	0.00300	U	0.0600	U	0.0600	U	0.0600	U	0.0600	U
Nitrogen, Nitrite	1	0.00300	U	0.0600	U	0.0600	U	0.00300	U	0.0600	U	0.0600	U	0.0600	U	0.0600	U
Nitrogen, Nitrate+Nitrite	10	0.00600	U	0.120	U	0.120	U	0.00600	U	0.1200	U	0.120	U	0.120	U	0.120	U
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Gross Alpha	15	2.05		2.01		4.80		8.36		2.29		6.23	J	11.1		-0.116	U
Gross Beta ⁽³⁾	50	3.49		4.63		12.8		27.8		1.97		15.5		14.9		-0.181	U
Radium-226 ⁽⁴⁾	5	0.953		-0.0668	U	0.655		0.444		0.874		0.600		1.71		0.028	U
Radium-228 ⁽⁴⁾	5	2.60		0.677		1.85		2.14		1.38		2.76		4.66		0.118	U
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Total Alkalinity	NS	51.0		5.00	U	79.8		486		63.9		5.00	U	5.00	U	5.00	U
Total Dissolved Solids	500	116		201		340		3230		316		2210		1750		6.00	U
Total Suspended Solids	NS	18.0	J	15.0		80.0		100		34.0		3.00	J	7.00	J	2.00	U

Table 3
Fall 2022 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Data Qualifiers:

B -- Analyte is found in the associated blank as well as in the sample.

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

⁽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⁾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.

⁽⁴⁾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 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	7A												
Sample Number:	SMCL	7A-20170711	7A-20171012	7A-20180508	7A-20181024	7A	7A	7A_052020	7A	7A	7A	7A	7A	
Date Sampled:	⁽¹⁾	7/11/2017	10/12/2017	5/8/2018	10/24/2018	7/8/2019	11/21/2019	5/20/2020	09/22/2020	4/27/2021	9/20/2021	5/4/2022	8/31/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	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	0.0596	0.455	0.121	0.0732	0.0656	0.0400 U	0.0640	0.0849	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.0019 J	0.0019 J	0.0007 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0011 J	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.000069 J	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.00047 J	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	5.2	5	5.1	5.5	6.38	5.87	6.04	5.57	5.81	7.10	5.29	5.59	
Iron	0.3	15	12	13	13	21.1	15.3	16.4	13.1	9.04	10.1	13.8	15.1	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0005 J	0.00038 J	0.0018 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	2.2	1.9	2.2	2.2	2.77	2.34	2.18	2.26	2.17	2.47	1.95	2.17	
Manganese	0.05	0.2	0.2	0.52	0.2 J	0.221	0.209	0.238	0.201	0.176	0.161	0.191	0.178	
Nickel ⁽²⁾	0.073	0.0024 J	0.0031 J	0.0049 J	0.005 UJ	0.002 U	0.0019 J	0.003 U	0.0004 U	0.0020 U	0.0038 J	0.0004 J	0.0020 U	
Potassium	NS	1.2	1.1	0.98 J	1.3 J	1.16	1.15	1.08	1.29	1.19	1.36	1.14	1.20	
Sodium	NS	10	6.3	6.4	6.8	8.28	6.69	10.1	10.4	9.95	9.71	9.25	6.87	
Zinc	5	0.02 U	0.02 U	0.02 U	0.0097 J	0.0031 J	0.02 U	0.015 U	0.0023 U	0.0020 U	0.0796 J	0.0025	0.0020 U	
Anions		mg/L	mg/L	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	0.1 U	0.37 J	0.2 J	0.0301	0.50 U	0.2 U	0.200 U	0.100 U	0.200 U	0.100 U	2.00 U	
Chloride	250	13	7.9	8.9	7.8	14.8	10.1	11.5	10.1 U	9.83	14.0	8.68	9.02	
Fluoride	2	0.085 J	0.058 J	0.1	0.068 J	0.0497	0.083 J	0.085 J	0.200 U	0.100 U	0.200 U	0.100 U	2.00 U	
Sulfate	250	2.3	0.59	1.6	1 UJ	4.85	1.9 J	14.5	9.18 U	8.78	8.98	8.02	3.35	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	0.4	0.05	0.93	0.03 J	3.99	1.3	3.5	6.35	5.81	5.50	4.21	2.86	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 R	0.00474 J	0.010 U	0.005 U	0.0600 U	0.0300 U	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	1.5	0.31	0.45	0.014 J	3.99	1.3	3.5	6.35	5.81	5.50	4.21	2.86	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	0.856 U	1.45 U	0.288 U	-0.454 U	1.1 U	0.127 U	-0.364 U	1.3	0.136 U	-0.0863 U	0.0735 U	0.507 J	
Gross Beta ⁽⁴⁾	50	0.915 U	1.5 U	1.67 J	1.26 J	3.2	1.22 U	3.53 U	2.7	-0.0276 U	5.27	1.35 J	0.223 U	
Radium-226 ⁽⁵⁾	5	0.188 U	0.0293 U	0.155 J	0.188 U	0.4	0.489 U	0.135 U	0.8 U	-0.275 U	0.19 J	0.193	0.275	
Radium-228 ⁽⁵⁾	5	0.28 U	0.549 J	0.171 U	0.333 U	0.8 U	1.14 U	-0.167 U	0.9 U	0.0518 U	0.534 J	0.561	0.547	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	51 U	45	21	30	8.2 J	28	33	21.3	5.00 U	5.00	5.00 UJ	18.9	
Total Dissolved Solids	500	140	93	83	76	104	74	112	73.0	155 J	111	117	130	
Total Suspended Solids	NS	34	27	53	30 J	50	47.3	12.6	23.0	15.0 J	15.0	9.00 J	28.0	
Field Parameters														
pH (S.U.)	6.5-8.5	6.29	5.49	6.14	6.26	NA	NA	5.94	6.05	5.29	5.30	6.30	6.12	
Specific Conductivity (mS/cm)	NS	0.166	0.131	0.118	0.122	NA	NA	0.116	0.105	0.132	0.154	0.161	0.128	
Temperature (°c)	NS	20.84	20.01	24.04	18.01	NA	NA	14.86	18.09	12.83	17.96	11.96	18.98	
Turbidity (NTU)	NS	19.1	13.9	7.62	16.3	NA	NA	21.9	8.2	8.4	-4.2	10.1	6.4	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	7.70	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-42	-15	-26	-8	NA	NA	-28	-28	99	-1	-18	69	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	7B														
Sample Number:	SMCL	7B-20170711	7B-20171012	7B-20180508	7B-20181024	7B	DUP-2	7B	DUP-11219	7B_052020	7B	7B	7B	7B	7B	
Date Sampled:	⁽¹⁾	7/11/2017	10/12/2017	5/8/2018	10/24/2018	7/10/2019	7/10/2019	11/21/2019	11/21/2019	5/20/2020	09/22/2020	4/27/2021	9/20/2021	5/4/2022	8/31/2022	
Duplicate of:							7B		7B							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.28		0.031 J	0.05 U	0.0255	0.0212	0.05 U	0.0132 J	0.018 J	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.001 U	0.001 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.003 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	25	21	19	19	17.6	17.4	16.1	16.6	19.1	16.4	15.3	14.9	15.3	15.6	
Iron	0.3	22	21	18	19	18.3	18.3	15.5	16.1	19.1	18.2	16.4	15.5	17.3	17.5	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.0028 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	3.7	3.3	3.2	3.4	3.36	3.45	2.97	3.06	3.22	3.29	3.05	2.86	3.00	3.03	
Manganese	0.05	0.2	0.17	0.16	0.16 J	0.141	0.148	0.129	0.134	0.271	0.155	0.131	0.123	0.136	0.126	
Nickel ⁽²⁾	0.073	0.005 U	0.005 U	0.005 U	0.005 UJ	0.002 U	0.002 U	0.004 U	0.004 U	0.0022 U	0.0006 J	0.0020 U	0.0020 U	0.0005 J	0.0020 U	
Potassium	NS	8.7	8.4	11	12 J	11.9	11.9	11.1	11.3	15.6	9.62	8.97	8.07	8.08	7.57	
Sodium	NS	21	20	20	21	24.1	24	21	22.4	26.7	22.0	19.9	20.8	19.5	17.8	
Zinc	5	0.02	0.02 U	0.02 U	0.01 J	0.0101	0.0038 J	0.0038 J	0.02 U	0.005 U	0.0046 U	0.0020 U	0.0914	0.0042	0.0020 U	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.24 J	0.14 J	0.44 J	0.32 J	0.0698	0.0693	0.50 U	0.50 U	0.23 J	0.200 U	0.134 J	0.200 U	0.130 J	2.00 U	
Chloride	250	37	37	38	37	19.6	19.5	36.4	37.3	35.8	37.3 U	32.5	32.5	31.8	35.5	
Fluoride	2	0.07 J	0.04 J	0.093 J	0.043 J	0.0173	0.0167	0.065 J	0.19 J	0.08 J	0.200 U	0.100 U	0.200 U	0.100 U	2.00 U	
Sulfate	250	22	22	24	19 J	11.3	11.2	22.1	21.7	21.2	23.8 U	18.4	19.0	22.4	24.1	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.027	0.05 U	0.05 U	0.003 U	0.003 U	0.11 U	0.11 U	0.1 U	0.0600 U	0.100 U	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 R	0.003 U	0.003 U	0.010 U	0.012	0.0032 J	0.0600 U	0.0304 J	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.06 J	0.006 U	0.006 U	0.10 U	0.10 U	0.095 U	0.120 U	0.0782 J	0.120 U	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	2.54 J	1.28 U	1.94 J	2.31 J	3.1	1.4	0.38 U	5.64	3.19 U	2.3	1.15	2.59	1.73	1.35	
Gross Beta ⁽⁴⁾	50	7.62	7.5	11.4	9.54	16	12.2	12.6	10.3	20.9	14.4	8.3	10.9	10.9	6.93	
Radium-226 ⁽⁵⁾	5	0.894 U	0.826 J	0.754 J	0.868 U	1.4	0.7	1.15	0.669	1.29	1.0 U	-0.1 U	0.5	0.644	0.905	
Radium-228 ⁽⁵⁾	5	0.95 J	0.924 J	1.02	0.723 U	0.9	0.9	1.82 U	1.56 U	0.191 U	1.2	0.88	0.705	1.19	1.27	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	710	45	44	45	54	56.5	50.5	49	60	61.9	40.2	49.6	18.4	42.1	
Total Dissolved Solids	500	180	180	160	150	164	168	155	137	163	127	207 J	160	171	177	
Total Suspended Solids	NS	40	22	27	22 J	15.5	16	16.8	14.4	21.7	11.0	15.0 J	9.50	9.00	5.00 J	
Field Parameters																
pH (S.U.)	6.5-8.5	2.17	6.02	6.15	6.74	NA	NA	NA	NA	6.92	6.48	6.04	6.22	6.62	6.34	
Specific Conductivity (mS/cm)	NS	0.129	0.348	0.356	0.345	NA	NA	NA	NA	0.311	0.201	0.259	0.270	0.310	0.262	
Temperature (°c)	NS	17.73	15.12	15.47	15.05	NA	NA	NA	NA	14.73	14.85	15.05	14.49	14.04	15.56	
Turbidity (NTU)	NS	9.18	2.58	2.04	4.52	NA	NA	NA	NA	0.0	0.5	0.0	0.0	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.06	0.7	1.97	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	1.80	0.00	
Oxidation-Reduction Potential (mV)	NS	107	-75	-140	-65	NA	NA	NA	NA	-106	-78	-8	-116	-62	47	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	8A													
Sample Number:	SMCL	8A-20170713	8A-20171012	8A-20180508	8A-20181018	8A	8A	8A_052020	DUP_052020	8A	8A	8A	8A	8A	
Date Sampled:	⁽¹⁾	7/13/2017	10/12/2017	5/8/2018	10/18/2018	7/8/2019	11/21/2019	5/20/2020	5/20/2020	09/22/2020	4/27/2021	9/30/2021	5/4/2022	8/31/2022	
Duplicate of:									8A						
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	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	1.9	1.6	1.74	1.75	1.51	1.28	1.23	1.34	1.20	
Arsenic	0.01	0.0054	0.01	0.004	0.0042	0.0013 J	0.0068	0.0034	0.0035	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0026	0.0029	0.0024	0.0017	0.002 U	0.0018	0.0023	0.0023	0.0020	0.0015 J	0.0020 U	0.0017 J	0.0020 U	
Cadmium	0.005	0.0023	0.0009	0.00056	0.00087	0.0009 J	0.00064 J	0.00062 J	0.00062 J	0.0009 J	0.0009 J	0.0020 U	0.0007 J	0.0020 U	
Calcium	NS	74 J	75	63	57	53.7	51.5	53.2	57.9	50.4	45.2	42.2	43.5	44.2	
Iron	0.3	16	15	13	11	9.47	8.99	8.41	9.45	6.63	4.67	2.83	1.97	1.56	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 J	0.0011 J	0.0014 U	0.0023 U	0.0020 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	38	37	33	29	30	25.7	27.3	30.8	27.9	24.4	21.4	22.9	23.0	
Manganese	0.05	19 J	21	19	15	14.7	13.8	13	13	14.2	11.9	10.9	11.9	11.3	
Nickel ⁽²⁾	0.073	0.058	0.057	0.052	0.049	0.0469	0.0377	0.0354	0.0354	0.0418	0.0349	0.0369	0.0330	0.0178	
Potassium	NS	5.7	6.1	5.5	5.1	5.27	4.56	4.79	4.82	4.83	4.47	3.99	4.40	4.53	
Sodium	NS	90 J	86	74	66	67.7	62	62.2	69.3	64.5	56.0	50.1	55.4	56.7	
Zinc	5	0.4	0.36	0.33	0.29	0.2985	0.237	0.263 U	0.264 U	0.239	0.192	0.169	0.0190	0.158	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	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	0.282	0.50 U	0.2 U	0.2 U	0.600 U	0.244 J	2.11	0.204 J	2.00 U	
Chloride	250	120 J	110	98	100	78.9	79.7	74.7	75.1	94.2 U	80.0	384	69.6	78.2	
Fluoride	2	0.94	0.96	1	0.89 J	0.643	1	0.86	0.86	0.676	0.554	0.500 U	0.476	2.00 U	
Sulfate	250	560 J	430	430	390	290	375	344	341	361 U	308	2510	251	313	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0029 J	0.05 U	0.05 U	0.11	0.11 U	0.16	0.1 U	0.0600 U	0.0300 U	0.150 U	0.251	0.465	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.003	0.010 U	0.16	0.005 U	0.120 U	0.0300 U	0.150 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.012 J	0.11	0.10 U	0.005 U	0.095 U	0.0600 U	0.0600 U	0.300 U	0.251	0.465	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	24.8	14.5	12.2	5.59 U	19.0	6.5	8.62	8.08	5.58	
Gross Beta ⁽⁴⁾	50	21.1	15.6	16.1	14.7	34.9	14	13.1	13.1	31.0	15.7	15.6	17.0	14.1	
Radium-226 ⁽⁵⁾	5	1.94	1.76	1.69	1.85	8.2	1.5	2.22	2.63	5.7	7.16	1.25	1.25	1.55	
Radium-228 ⁽⁵⁾	5	9.59	9.57	9.15	8.07	6.1	8.9	4.97	6.84	6.8	1.63	8.83	6.81	6.68	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	4 U	4 U	5.00 U	5.00 U	5.00 U	5.00 UJ	5.00 U	
Total Dissolved Solids	500	920	880	850	720	694	577	550	587	584	738 J	523	596	553	
Total Suspended Solids	NS	8.2	1.8	1 U	1 U	2.4	4.0 U	2 U	2 U	2.00 U	10.0 U	1.00 J	0.400 J	5.00 J	
Field Parameters															
pH (S.U.)	6.5-8.5	4	3.9	3.86	4.24	NA	NA	3.90	NA	4.19	3.55	3.85	4.05	3.83	
Specific Conductivity (mS/cm)	NS	0.561	1.26	1.19	1.12	NA	NA	0.848	NA	0.583	0.705	0.673	0.852	0.741	
Temperature (°c)	NS	18.14	15.44	16.18	15.04	NA	NA	15.21	NA	15.53	14.97	15.1	14.57	15.76	
Turbidity (NTU)	NS	3.43	0.87	1.2	1.81	NA	NA	0.0	NA	1.7	1.9	0.0	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	1.35	0.96	0.3	0.00	NA	NA	0.00	NA	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	217	288	244	277	NA	NA	273	NA	234	334	244	360	357	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	8B													
Sample Number:	SMCL	8B-20170713	8B-20171012	8B-20180508	8B-20181018	8B	8B	8B_052020	8B	DUP-2	8B	8B	8B	8B	
Date Sampled:	⁽¹⁾	7/13/2017	10/12/2017	5/8/2018	10/18/2018	7/8/2019	11/21/2019	5/20/2020	09/22/2020	9/22/2020	4/27/2021	9/20/2021	5/4/2022	8/31/2022	
Duplicate of:										8B					
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	1.6	1.6	1.5	1.5	1.38	1.09	1.15	1.33	1.36	1.02	1.02	0.934	0.936	
Arsenic	0.01	0.0021 J	0.0033	0.0015 J	0.002 J	0.001 U	0.0019 J	0.0011 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0029	0.003	0.0025	0.0026	0.002 J	0.0023	0.0026 J	0.0025	0.0025	0.0018 J	0.0021 J	0.0019 J	0.0020 U	
Cadmium	0.005	0.0015	0.001	0.00078	0.0011	0.0011 J	0.00070 J	0.00079 J	0.0010 J	0.0010 J	0.0008 J	0.0020 U	0.0009 J	0.0020 U	
Calcium	NS	56 J	53	50	47	45.2	36.8	43.2	41.2	42.4	33.9	32.4	30.6	33.5	
Iron	0.3	0.076 U	0.23	0.055 J	0.41	0.0619	0.164	0.0955	0.0400 U	0.0400 U	0.04 U	0.0400 U	0.0333 J	0.0168 J	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0044	0.0015 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	36	35	34	32	32.5	30.7	38.5	31.9	32.4	26.1	26.6	25.0	25.5	
Manganese	0.05	8.8 J	8.8	7.8	7.6	7.31	4.95	5.18	6.68	6.81	5.20	4.46	4.64	5.11	
Nickel ⁽²⁾	0.073	0.043	0.044	0.041	0.039	0.0364	0.0267	0.0282	0.0324	0.0327	0.0274	0.0275	0.0255	0.0174	
Potassium	NS	4.4	4.7	4.8	4.5	4.77	4.15	4.26	4.52	4.62	4.17	4.00	3.94	4.04	
Sodium	NS	170 J	190	190	190	208	224	205	205	203	182	207	194	167	
Zinc	5	0.21	0.19	0.2	0.18	0.183	0.146	0.151 U	0.153	0.158	0.130	0.193	0.0231	0.129	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.32 J	0.26	0.63	0.35 J	0.212	0.50 U	0.24 J	0.200 U	0.600 U	0.222 J	0.218 J	0.207 J	2.00 U	
Chloride	250	300	310	300	340	268	334	310	367	372	309	323	274	290	
Fluoride	2	0.39	0.33	0.47	0.4 J	0.29	0.38	0.37 J	0.370	0.361	0.231	0.296	0.222 J	2.00 U	
Sulfate	250	290 J	250	270	250	179	254	227 J	268 U	272 U	223	203	197	261	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	1.8	2.0	9	1	9.57	13.2	11.4	10.3	10.4	9.83	10.7	9.62	10.6	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.003 U	0.010 U	0.0032 J	0.0600 U	0.0600 U	0.0300 U	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	6.3	10	7.8	9.4	9.57	13.2	11.4	10.3	10.4	9.83	10.7	9.62	10.6	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	2.91 U	5.1	7.27	1.06 U	19.2	4.8	-0.234 U	11.7	9.1	4	4.45	2.17	1.58 J	
Gross Beta ⁽⁴⁾	50	11.1	7.72	9.68	8.8	16.3	7.1	13.7	14.7	17.3	6.78	8.79	9.46	6.58	
Radium-226 ⁽⁵⁾	5	0.801 U	1.28	1.2	1.36	3.7	0.7	1.87	4.2	3.8	4.35	1.26	0.884	1.41	
Radium-228 ⁽⁵⁾	5	3.42	4.06	4.39	3.6	4.2	4.1	2.92 J	3.9	4.0	0.9	4.2	2.95	3.04	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	4 U	5.00 U	5.00 U	5.00 U	7.08	5.00 U	5.00 U	
Total Dissolved Solids	500	890	990	1000	1000	1020	874	877	888	914	932 J	938	922	844	
Total Suspended Solids	NS	1 U	1 U	1 U	1 U	1.6 J	4.0 U	2 U	2.00 U	2.00 U	10.0 U	0.800	0.400 U	2.00 J	
Field Parameters															
pH (S.U.)	6.5-8.5	4.09	3.97	4.19	4.25	NA	NA	4.28	4.1	NA	3.76	3.76	4.24	3.94	
Specific Conductivity (mS/cm)	NS	1.57	1.69	1.56	1.72	NA	NA	1.470	1.18	NA	1.16	1.54	1.75	1.39	
Temperature (°c)	NS	19.84	17.55	19.21	16.25	NA	NA	16.17	15.31	NA	15.43	15.02	14.99	15.77	
Turbidity (NTU)	NS	1.4	3.54	1.85	4.37	NA	NA	2.4	0.4	NA	0.6	0.0	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.15	0.54	1.68	2.15	NA	NA	3.22	1.33	NA	2.69	35.5	7.75	NA	
Oxidation-Reduction Potential (mV)	NS	396	220	380	380	NA	NA	363	227	NA	364	435	409	375	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	11A															
Sample Number:	SMCL	11A-20170706	DUP-02-20170706	11A-20171010	DUP-03-20171010	11A-20180430	11A-20181017	11A	DUP-1	11A	11A_051920	11A	11A	11A	11A	11A	11A
Date Sampled:	(1)	7/6/2017	7/6/2017	10/10/2017	10/10/2017	4/30/2018	10/17/2018	7/9/2019	7/9/2019	11/22/2019	5/19/2020	9/21/2020	4/21/2021	9/27/2021	5/5/2022	8/30/2022	
Duplicate of:			11A-20170706		11A-20171010				11A								
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.132	0.104	0.050 U	0.155	0.0389 J	0.0288 J	0.0636 J	0.0431	0.0451	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.001 U	0.0020 U	0.001 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 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	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Calcium	NS	15	16	17 J	16 J	16	15	14.1	14	16.5	13.5	9.97	8.55	9.10	9.00	8.80	
Iron	0.3	8.9	8.8	5.9 J	5.8 J	6	8.3	9.05	8.88	8.08	12.1	8.73	8.58	9.04	8.90	8.66	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.0020 U	0.00036 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Magnesium	NS	2.5	2.6	2.6 J	2.5 J	2.2	2.4	2.26	2.3	2.09	1.97	1.93	1.74	1.76	1.81	1.81	
Manganese	0.05	0.15	0.16	0.19 J	0.17 J	0.11	0.4	0.121	0.125	0.154	0.14	0.112	0.0926	0.0905	0.0975	0.0858	
Nickel ⁽²⁾	0.073	0.005 U	0.005 U	0.005 UJ	0.005 UJ	0.005 U	0.005 U	0.002 U	0.002 U	0.0019 J	0.003 U	0.00054 J	0.0190	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Potassium	NS	28	29 J	30	30	29	26	19.5	19.3	26.6	22.2	12.1	9.66	9.22	8.94	7.06	
Sodium	NS	34	34 J	33 J	33 J	33	30	28.9	28.6	34.8	31.1	22.9	19.2	19.6	21.1	18.8	
Zinc	5	0.045	0.041	0.02 UJ	0.02 UJ	0.02 U	0.02	0.0321	0.0318	0.0107 J	0.0475	0.0080	0.0054	0.0139	0.0043	0.0028 J	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.075	0.0651	0.50 U	0.2 U	0.200 U	0.100 U	0.500 U	0.100 U	2.00 U	
Chloride	250	17	17	17	17	17	17	18	18.1	16.5	18.7	16.3	1.00 U	14.0 J	13.8	15.5	
Fluoride	2	0.086 J	0.083 J	0.063 J	0.058 J	0.085 J	0.046 J	0.0519	0.0551	0.089 J	0.092 J	0.200 U	0.100 U	0.500 U	0.100 U	2.00 U	
Sulfate	250	12	12	14	14	14	14	14.2	14.3	14.7	12.9	14.9	13.2	11.7 J	10.4	13.5	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	ND	ND	0.05 U	0.05 U	0.006 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	ND	ND	0.05 U	0.05 UJ	0.006 U	0.006 U	0.013	0.005 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.00600 U	
Nitrogen, Nitrate-Nitrite	10	0.14 J	0.025 U	0.025 U	0.025 U	0.025 U	0.11	0.012 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.0600 U	0.00300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	1.3	3.2	2.06 U	3.42 U	2.7	1.3 U	1.37	2.54	0.836 J	
Gross Beta ⁽⁴⁾	50	19.7	21.1	26.1	25.9	25.9	21.2	23.7	25.3	24.5	16.1	7.5	5.67	10.6	12.0	7.29	
Radium-226 ⁽⁵⁾	5	0.653 J	0.699 J	0.96 J	0.862 J	0.769 J	0.872 U	0.8	0.9	1.04	1.39	0.7	0.407	0.415 J	0.591	1.29	
Radium-228 ⁽⁵⁾	5	0.488 J	0.288 U	0.576 J	0.807 J	0.503 J	1.1 U	0.7 U	0.7 U	-0.516 U	-0.849 U	1.4	-0.0266 U	0.820	0.647	0.450	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	100	120	110	110	120	110	89.2	93.9	113	98.5	62.9	58.9	53.3	42.1	49.8	
Total Dissolved Solids	500	130	130	200	240	190	190	160	170	181	152	132	125	132	127	121	
Total Suspended Solids	NS	26	24	12	13	11	15	18	20	14.2	24	12.0	3.00 J	8.00	4.80	7.00 J	
Field Parameters																	
pH (S.U.)	6.5-8.5	7.08	NA	7.1	NA	7.14	7.18	NA	NA	NA	7.24	6.17	6.14	6.32	6.54	6.20	
Specific Conductivity (mS/cm)	NS	0.31	NA	0.392	NA	0.404	0.358	NA	NA	NA	0.292	0.158	0.186	0.194	0.224	0.184	
Temperature (°c)	NS	15.51	NA	16.65	NA	14.56	14.44	NA	NA	NA	15.36	14.28	14.2	13.69	13.68	15.16	
Turbidity (NTU)	NS	30	NA	5.99	NA	9.83	20.1	NA	NA	NA	37.9	5.7	0.0	11.4	0.0	0.9	
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.00	NA	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-69	NA	-175	NA	-125	-115	NA	NA	NA	-123	-50	80	-47	-27	57	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	11C												
Sample Number:	SMCL	11C-20170706		11C-20171009		11C-20180501		11C-20181016		11C		11C		11C
Date Sampled:	⁽¹⁾	7/6/2017		10/9/2017		5/1/2018		10/16/2018		7/9/2019		11/22/2019		5/19/2020
Duplicate of:														
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Aluminum	0.05	5.7		4		6		17 J		5.69		4.06		5.22
Arsenic	0.01	0.003 U		0.0024 J		0.003 U		0.0036		0.0028		0.0041		0.0013 J
Beryllium	0.004	0.0027		0.0014		0.0022		0.0092		0.0047 J		0.0052		0.0033
Cadmium	0.005	0.0002 J		0.00017 J		0.0032		0.0021		0.0016 J		0.00050 J		0.0012 J
Calcium	NS	31		37		21		56		45.2		52.2		28.5
Iron	0.3	32		39		19		30		26.6		24.7		11.5
Lead	0.015	0.0025 U		0.0025 U		0.0025 U		0.0025 U		0.0006 J		0.00042 J		0.00047 J
Magnesium	NS	22		27		17		27		18		17.9		16.3
Manganese	0.05	12		16		8.6		17		10.8		10		6.4
Nickel ⁽²⁾	0.073	0.062		0.044		0.057		0.17		0.174		0.076		0.084
Potassium	NS	4.4		4.8		3.4		4.7		4.35		3.8		3.51
Sodium	NS	27		34		21		27		14.5		17.9		16.4
Zinc	5	0.16		0.11		0.26		0.54		0.563		0.308		0.217
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Bromide	NS	0.26 J		0.24 J		0.27 J		5 U		0.129		0.50 U		0.12 J
Chloride	250	20		31		18 J		19		12.7		16.3		15.2
Fluoride	2	0.29		0.44		0.27 J		0.9 J		0.406		0.79		0.29
Sulfate	250	120		110		110		350		207		243		145
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Nitrogen, Nitrate	10	0.0081 J		0.0061		1.5		0.088		0.718		0.11 U		1.2
Nitrogen, Nitrite	1	0.0073 J		ND		0.05 U		0.05 U		0.0097 J		0.010 U		0.023
Nitrogen, Nitrate-Nitrite	10	0.051 UJ		0.044 J		1.2		0.094		0.728		0.10 U		1.2
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L
Gross Alpha ⁽³⁾	15	5.47		0.427 U		2.79		7.58		3.3		5.85		4.55 U
Gross Beta ⁽⁴⁾	50	5.75 U		2.51 J		4.66		4.03		8.9		5.93		4.59 J
Radium-226 ⁽⁵⁾	5	0.115 U		0.123 J		0.082 U		0.395 U		0.5		0.431 U		0.208 U
Radium-228 ⁽⁵⁾	5	0.936 J		0.961 J		0.589		1.42		0.8		1.79 U		-0.254 U
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L
Total Alkalinity	NS	69		200		83		44		5 U		13.5		32
Total Dissolved Solids	500	360		450		350		530		455		457		302
Total Suspended Solids	NS	71		62		13		75		65		30.5		34.8
Field Parameters														
pH (S.U.)	6.5-8.5	5.87		6.22		5.73		5.5		NA		NA		5.65
Specific Conductivity (mS/cm)	NS	0.225		0.782		0.426		0.78		NA		NA		0.378
Temperature (°c)	NS	17.56		23.37		17.04		16.96		NA		NA		14.48
Turbidity (NTU)	NS	24.8		19.8		19.8		63.4		NA		NA		38.1
Dissolved Oxygen (mg/L)	NS	0.00		0.00		1.42		0.00		NA		NA		0.00
Oxidation-Reduction Potential (mV)	NS	-53		-91		4		104		NA		NA		102

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	11R													
Sample Number:	SMCL	11R-20170706	11R-20171009	11R-20180430	11R-20181017	11R	11R	11R_051920	11R	11R	DUP-1-11R	11R	DUP-3-11R	11R	11R
Date Sampled:	⁽¹⁾	7/6/2017	10/9/2017	4/30/2018	10/17/2018	7/9/2019	11/22/2019	5/19/2020	9/21/2020	4/21/2021	4/21/2021	9/27/2021	9/27/2021	5/5/2022	8/30/2022
Duplicate of:															
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.191	0.505	0.419	0.176	0.141	0.125	0.321	0.281	0.275	0.347
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.00028 J	0.001 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.00027 J	0.00035 J	0.0004 U	0.00023 J	0.002 U	0.00025 J	0.00026 J	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U
Calcium	NS	9	8.5	8.8	7.7	7.43	7.7	8.13	7.07	6.92	6.98	7.18	7.03	7.36	6.95
Iron	0.3	19	19	18	15	22.6	17.7	17.6	17.3	16.7	16.8	16.9	16.2	17.3	16.4
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00038 J	0.00023 J	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U
Magnesium	NS	1.7	1.6	1.7	1.5	1.76	1.57	1.57	1.59	1.48	1.49	1.50	1.47	1.55	1.57
Manganese	0.05	0.14	0.13	0.13	0.15	0.124	0.12	0.127	0.131	0.117	0.118	0.117	0.112	0.124	0.116
Nickel ⁽²⁾	0.073	0.005 U	0.005 U	0.005 U	0.005 U	0.002 U	0.0040 U	0.003 U	0.0005 J	0.0033 J	0.0096 J	0.0024 J	0.0020 U	0.0004 U	0.0020 U
Potassium	NS	1.9	2	2.3	2.3	1.9	2.11	1.95	1.68	1.52	1.51	1.57	1.61	1.63	1.50
Sodium	NS	9.6	9	9.7	8.2	8.59	8.03	8.51	8.40	7.00	7.02	7.03	7.54	7.94	7.66
Zinc	5	0.01 J	0.02 U	0.02 U	0.02 U	0.0036 J	0.0077 J	0.0075 J	0.0029	0.0032	0.0035	0.0093 J	0.0113	0.0038	0.0024 J
Anions		mg/L	mg/L	mg/L	mg/L	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	0.1 U	0.5 U	0.5 U	0.0219 J	0.50 U	0.2 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U	0.100 U	2.00 U
Chloride	250	4.1	5	4.4	4.4	4.06	4.1	5.2	3.96 J	1.00 U	1.00 U	5.00 U	5.00 U	3.44	3.87
Fluoride	2	0.079 J	0.052 J	0.082 J	0.04 J	0.0432	0.088 J	0.086 J	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U	0.100 U	2.00 U
Sulfate	250	12	13	27	13	13.8	14.2	14.6	14.6	13.7	13.7	11.9 J	11.5 J	10.4	13.8
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.006 U	0.11 U	0.35	0.0600 U	0.0300 U	0.0300 U	0.150 U	0.150 U	0.0300 U	0.00300 U
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 UJ	0.006 U	0.0052	0.005 U	0.0600 U	0.0300 U	0.0300 U	0.150 U	0.150 U	0.0300 U	0.00300 U
Nitrogen, Nitrate-Nitrite	10	0.014 UJ	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.35	0.120 U	0.0600 U	0.0600 U	0.300 U	0.300 U	0.0600 U	0.00600 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	1.14 U	1.43 J	2.97 J	0.908 U	1.4	5.87	2.19 U	2.3	1.32 J	1.55 J	2.51	1.49	2.89	2.42
Gross Beta ⁽⁴⁾	50	2.66 U	2.14 J	4.22	2.55 J	4.3	5.34	4.15 U	4.4	1.42 J	1.45 J	3.51	4.44	7.45	2.35
Radium-226 ⁽⁵⁾	5	0.775 J	0.812 J	0.912 J	0.862 U	0.6	1.45	0.84 J	1.4	1.14	1.05	0.697	0.784	0.724	0.512
Radium-228 ⁽⁵⁾	5	0.489 J	1.08	0.3 U	0.46 U	1.2	0.373 U	0.518 U	0.9 U	0.628	0.415 J	0.872 J	0.950	1.05	0.486
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	29	36	58	5 U	24.5	26.5	52.5	38.5	46.9	45.8	40.0	39.7	29.0	25.5
Total Dissolved Solids	500	59	83	92 U	85	67	186	78	77.0	99.0	69.0 J	199 J	98.0 J	86.0	75.0
Total Suspended Solids	NS	26	33	4.9	29	41	14.2	18.3	27.0	5.00 J	23.0 J	5.33	6.00	12.0	11.0
Field Parameters															
pH (S.U.)	6.5-8.5	6.16	5.85	6.09	6.22	NA	NA	6.31	6.08	5.94	NA	6.08	NA	6.29	5.98
Specific Conductivity (mS/cm)	NS	0.151	0.152	0.189	0.156	NA	NA	0.143	0.097	0.129	NA	0.131	NA	0.149	0.130
Temperature (°C)	NS	18.38	16.42	15.33	13.97	NA	NA	14.27	15.21	14.13	NA	13.82	NA	14.44	14.77
Turbidity (NTU)	NS	10.8	26	1.14	19.7	NA	NA	17.6	6	2.9	NA	8.6	NA	5.0	5.8
Dissolved Oxygen (mg/L)	NS	0.00	0.88	0.00	0.00	NA	NA	0.00	0.00	0.00	NA	0.00	NA	0.00	0.00
Oxidation-Reduction Potential (mV)	NS	1	-19	-22	-3	NA	NA	-36	-43	69	NA	-32	NA	-16	71

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	12R																								
Sample Number:	SMCL	12R-20170711	12R-20171016	12R-20180509	12R-20181025	12R	12R	12R	12R_051820	12R	12R	12R	12R	12R												
Date Sampled:	⁽¹⁾	7/11/2017	10/16/2017	5/9/2018	10/25/2018	7/16/2019	11/20/2019	11/19/2019	5/18/2020	09/29/2020	4/28/2021	9/29/2021	5/11/2022	9/8/2022												
Duplicate of:																										
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L												
Aluminum	0.05	0.17	0.12	0.14	0.09	J	0.336	NA	0.0592	0.103	2.24	0.0854	0.0892	J	0.346	0.615										
Arsenic	0.01	0.0017	J	0.0021	J	0.0022	J	0.0017	J	0.0013	J	0.0029	0.0015	J	0.0010	U	0.0020									
Beryllium	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0010	U	0.0005	U	0.0004	U	0.0004	U	0.0020	U							
Cadmium	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0030	U	0.002	U	0.0004	U	0.0004	U	0.0020	U							
Calcium	NS	1000	1500	1500	1300	779	NA	768	779	857	742	657	619	616												
Iron	0.3	0.96	0.66	0.99	0.69	2.86	NA	2.79	5.89	31.3	12.1	27.7	24.1	23.2												
Lead	0.015	0.0025	U	0.0025	U	0.0025	U	0.0004	U	0.00095	J	0.00017	J	0.00090	J	0.0004	U	0.0020	U							
Magnesium	NS	0.58	0.36	1.6	1.4	11.2	NA	12	25.9	46.1	44.4	55.4	54.9	62.8												
Manganese	0.05	0.14	0.11	0.39	0.32	1.84	NA	1.82	4.88	16.8	12.4	17.0	16.6	18.6												
Nickel ⁽²⁾	0.073	0.045	0.057	0.05	0.05	0.0418	NA	0.0144	0.0165	0.0553	0.0464	0.0420	0.0498	0.0601												
Potassium	NS	13	12	11	12	12.1	NA	10.6	10.3	10.7	10.9	10.4	10.7	11.4												
Sodium	NS	410	290	240	260	346	NA	301	287	334	340	378	392	417												
Zinc	5	0.022	0.011	J	0.013	J	0.02	0.0285	NA	0.10	U	0.0133	J	0.144	0.0513	0.0905	0.0514	0.108								
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L							
Bromide	NS	12	12	11	8.5	J	8.45	8.8	NA	7	7.93	7.41	7.34	4.61	6.09											
Chloride	250	2600	2300	2200	1800	J	1540	NA	1530	1710	1530	1320	1340	837	883											
Fluoride	2	1	U	0.06	UJ	1	U	1	UJ	0.02	0.24	NA	0.18	J	0.259	0.100	U	0.500	U	0.200	U					
Sulfate	250	190	250	260	440	J	393	NA	491	594	811	695	753	457	0.200	U										
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L							
Nitrogen, Nitrate	10	0.010	J	0.0021	J	0.037	J	0.036	J	0.0704	0.11	U	NA	0.58	0.329	0.875	J	0.500	UJ	0.705	0.199	J				
Nitrogen, Nitrite	1	ND	ND	0.05	U	0.35	0.006	U	0.033	NA	0.088	0.348	0.249	J	0.177	J	0.525	1.50	B							
Nitrogen, Nitrate-Nitrite	10	0.095	0.013	J	0.1	0.24	U	0.0704	0.10	U	NA	0.67	0.677	1.12	J	0.656	J	1.23	1.70							
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L							
Gross Alpha ⁽³⁾	15	15.5	U	12.4	U	1.98	U	19.6	U	6.9	U	NA	0.133	U	3.9	U	5.3	U	-4.18	U	5.82	J	6.11	J	-2.11	U
Gross Beta ⁽⁴⁾	50	2.01	U	7.7	U	21.6	U	17.8	U	15.6	NA	5.18	U	3.95	U	18.9	-3.96	U	6.00	J	15.9	J	15.2	J		
Radium-226 ⁽⁵⁾	5	2.25	0.913	J	0.48	J	0.742	J	0.7	0.412	U	NA	0.263	U	0.4	0.558	J	0.171	U	0.339	J	0.205	J			
Radium-228 ⁽⁵⁾	5	1.53	1.58	U	0.799	J	0.988	J	0.8	0.616	U	NA	0.0554	U	0.8	U	0.0204	U	-0.0248	U	0.0884	U	0.273	J		
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5	U	580	820	760	5	U	50.5	NA	69.5	291	297	407	386	455										
Total Dissolved Solids	500	11000	11000	10000	8300	4220	NA	3760	4500	4300	4190	4100	4160	4320												
Total Suspended Solids	NS	32	19	45	200	92.9	NA	38.3	22.5	82.0	44.0	55.0	58.6	50.0												
Field Parameters																										
pH (S.U.)	6.5-8.5	13.18	12.87	11.66	9.68	NA	NA	NA	7.23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Specific Conductivity (mS/cm)	NS	7.17	10.7	6.12	5.37	NA	NA	NA	5.59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Temperature (°c)	NS	24.84	17.26	19.52	17.65	NA	NA	NA	17.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Turbidity (NTU)	NS	6.51	6.93	5.58	6.85	NA	NA	NA	6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dissolved Oxygen (mg/L)	NS	0.00	1.94	0.00	1.69	NA	NA	NA	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Oxidation-Reduction Potential (mV)	NS	-80	23	-195	-53	NA	NA	NA	-130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	13A												
Sample Number:	SMCL	13A-20170630	13A-20171003	13A-20180502	13A-20181019	13A	13A	13A_051420	13A	13A	13A	13A	13A	13A
Date Sampled:	⁽¹⁾	6/30/2017	10/3/2017	5/2/2018	10/19/2018	7/15/2019	11/22/2019	5/14/2020	09/17/2020	4/20/2021	9/27/2021	5/3/2022	9/8/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	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	1.3	2.66	0.398	1.37	2.31	0.721	2.91	2.49	
Arsenic	0.01	0.0018 J	0.003 U	0.003 U	0.003 U	0.0032	0.0012 J	0.0011 J	0.0010 U	0.0010 U	0.0010 U	0.0010	0.0010	U
Beryllium	0.004	0.00066	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.00016 J	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020	U
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020	U
Calcium	NS	23	23	26	31	21.3	26.8	33.5	20.7	18.6	25.3	18.6	18.0	
Iron	0.3	3.8	1.5	1.2	0.9	4.76	1.18	0.686	2.06	4.54	2.35	4.79	5.20	
Lead	0.015	0.0083	0.0022 J	0.0013 J	0.0025 U	0.0071	0.0015 J	0.00028 J	0.0007 U	0.0025	0.0020 U	0.0017 J	0.0020	U
Magnesium	NS	2.1	1.2	1	0.99	2.66	0.736	0.582	1.56	2.50	1.57	2.63	2.86	
Manganese	0.05	0.039	0.026	0.022 U	0.023	0.0618	0.0173	0.0134	0.0364 J	0.0584	0.0359	0.0632	0.0671	
Nickel ⁽²⁾	0.073	0.022	0.0027 J	0.0028 J	0.005 UJ	0.0086 J	0.0052	0.0026 J	0.0028	0.0044	0.0030 J	0.0023	0.0029	J
Potassium	NS	33	29	27	27 J	19.2	22.7	21	20.9	16.0	15.8	17.0	16.0	
Sodium	NS	32	29	28	28	18.5	28	25.1	21.1	13.9	17.6	15.6	13.0	
Zinc	5	0.035	0.02 U	0.02 U	0.02 U	0.0392	0.0055 J	0.015 U	0.0081	0.0157	0.0159	0.0149	0.0078	J
Anions		mg/L	mg/L	mg/L	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	0.1 U	0.5 U	0.5 U	0.0294 J	0.50 U	0.19 J	0.200 U	0.100 U	0.500 U	0.100 U	2.00	U
Chloride	250	3	3.6	3.8	4.4	2.68	4.9	5.6	3.55 J	2.76 J	5.00 U	2.34 J	2.83	J
Fluoride	2	0.16	0.15	0.14	0.12	0.0919	0.18 J	0.21	0.220	0.100	0.500 U	0.105 J	2.00	U
Sulfate	250	13	13	50	13	13.7	13.5	13	15.2	14.3	12.6 J	10.6	15.1	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	0.0016 J	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.0600	U
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 UJ	0.006 U	0.012	0.005 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.0600	U
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.0600 U	0.120	U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	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	4.3	1.87 U	5.08 J	3.9	3.14	1.54	1.91	2.59	
Gross Beta ⁽⁴⁾	50	27.1	27.3	22.8	17.9	22	19.1	18	26.7	12.6	15.1	19.9	17.5	
Radium-226 ⁽⁵⁾	5	0.578 J	0.427 J	0.394 J	0.591 U	1.5	0.89	0.214 U	0.6	0.372 J	0.227 J	0.973	0.578	
Radium-228 ⁽⁵⁾	5	0.663 J	1.15	0.132 U	0.315 U	0.9	0.857 U	-0.614 U	0.9 U	0.336	0.482 J	0.621	1.02	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	110	90	74	85	102	74.5	92.5	78.8	97.3	65.9	97.8	88.8	
Total Dissolved Solids	500	260	230	250	160	202	132	181	126 J	165	131	150	130	
Total Suspended Solids	NS	86	69	25	60	176	57.3	16.8	44.0	65.0	47.0	48.3	40.0	
Field Parameters														
pH (S.U.)	6.5-8.5	10.41	10.26	10.42	10.53	NA	NA	11.70	9.99	7.48	10.07	7.43	6.42	
Specific Conductivity (mS/cm)	NS	0.103	0.325	0.367	0.36	NA	NA	0.550	0.174	0.211	0.224	0.245	0.217	
Temperature (°C)	NS	21.26	14.51	16.98	13.64	NA	NA	13.89	14.1	14.19	15	13.35	14.47	
Turbidity (NTU)	NS	135	63.7	17.8	8.21	NA	NA	7.4	20	129	30.4	113	44.1	
Dissolved Oxygen (mg/L)	NS	0.00	0.67	0.38	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-109	-84	-211	-119	NA	NA	-84	-220	-88	-242	-157	33	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	14R															
Sample Number:	SMCL	14R-20170630	14R-20171010	14R-20180504	14R-20181018	DUP-02-20181018	14R	14R	14R_051820	DUP_051820	14R	14R	14R	14R	14R	DUP-2	
Date Sampled:	⁽¹⁾	6/30/2017	10/10/2017	5/4/2018	10/18/2018	10/18/2018	7/16/2019	11/19/2019	5/18/2020	5/18/2020	09/29/2020	4/28/2021	9/28/2021	5/11/2022	8/31/2022	8/31/2022	
Duplicate of:						14R-20181018				14R							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	18	15	15 J	13	13	15.2	11.6	14.8	12.5	12.6	9.93	9.33	8.38	8.36	8.15	
Arsenic	0.01	0.013	0.012	0.015	0.011	0.011	0.0065	0.0157	0.0161	0.0169	0.0095	0.0091	0.0043	0.0043	0.0045	0.0041	
Beryllium	0.004	0.0078	0.0069	0.0075	0.006	0.0062	0.0056 J	0.0064	0.0064	0.0067	0.0051	0.0033	0.0043 J	0.0021	0.0020	0.0020 U	
Cadmium	0.005	0.02 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U	
Calcium	NS	270	220 J	240	220	210	221	215	200	220	207	206	197	188	202	204	
Iron	0.3	420	360 J	390	350	350	354	357	310	339	352	343	330	324	333	346	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0029	0.0021	0.0022	0.00050 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U	
Magnesium	NS	230	210 J	210	180	180	211	191	177	193	198	192	180	181	182	182	
Manganese	0.05	230	190 J	200	180	170	200	170	161	198	172	166	151	146	158	154	
Nickel ⁽²⁾	0.073	0.9	0.7 J	0.77	0.64	0.63	0.727	0.622	0.843	0.709	0.675	0.523	0.627	0.357	0.245	0.227	
Potassium	NS	24	22	22	19	19	21.1	19	23	19.9	19.0	19.3	17.9	17.9	19.0	18.6	
Sodium	NS	440	390 J	400	330	330	390	339	326	355	360	351	328	307	321	307	
Zinc	5	2.2	1.8 J	1.9	1.7	1.7	1.63	1.76	2.2	2.24	1.57	1.43	1.24	0.101	1.59	1.55	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	4.6 J	2.6	4.4 J	2.5	2.5	2.21	1.5	3.6	3.5	2.46	2.39	2.44	2.03	2.26 J	2.35 J	
Chloride	250	680	620	650	610	610	528	484	576	615 J	598	527	506	404	442	454	
Fluoride	2	1.3 J	0.17	1.1 J	0.74	0.68	0.262	0.83	0.84	0.79	0.687	0.100 U	0.740	0.512 J	2.00 U	2.00 U	
Sulfate	250	3600	2600	3000	2800	2800	2370	2730	2730	3620 J	2380	2880	2730	2740	2290	2340	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.11 U	0.19	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 UJ	0.05 U	0.05 U	0.006 U	0.010 U	0.005 U	0.005 U	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.067 U	0.025 U	0.025 UJ	0.043 J	0.039 J	0.012 U	0.10 U	0.19	0.095 U	0.120 U	0.0600 U	0.300 U	0.120 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	44.4	23.4 U	31.4 U	26.4 U	5.18 U	20.1	11 U	10.5 U	NA	16.4	8.64 J	4.75 J	1.54 U	17.3	7.62 J	
Gross Beta ⁽⁴⁾	50	34.6	30.5	32.7	26.1 J	16.1 J	68.7	30.7	27.5 J	NA	56.1	71.9	23.0	38.8	24.7	25.3	
Radium-226 ⁽⁵⁾	5	1.3	1.69	1.74	1.58	1.4	10.7	1.41	1.3	NA	1.8	10.6	1.46	3.56	2.08	1.79	
Radium-228 ⁽⁵⁾	5	10.4	9.61	12	10.5	10.8	11.6	11.3	11 J	NA	8.8	0.481	12.2	11.2	8.45	8.14	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NA	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	4 U	4 U	5.00 U	5.00 U	5.00 U	6.03 J	6.20 J	10.1	
Total Dissolved Solids	500	5500	5300	5100	4900	5000	5170	4310	4760	4720	4530	4550	4740	4550	4220	4330	
Total Suspended Solids	NS	9.1	10	6.7	3.8	4.4	0.364 U	7	8.2	7.8	18.0	10.0 U	0.400 U	2.00 J	9.00 J	8.00 J	
Field Parameters																	
pH (S.U.)	6.5-8.5	4.42	4.37	4.03	4.42	NA	NA	NA	4.54	NA	4.4	4.04	4.31	4.42	4.14	NA	
Specific Conductivity (mS/cm)	NS	5.57	5.19	5.18	5.17	NA	NA	NA	5.00	NA	4.34	4.85	4.85	5.92	4.83	NA	
Temperature (°c)	NS	18.87	16.54	17.36	15.14	NA	NA	NA	14.80	NA	14.29	14.27	14.98	13.57	14.48	NA	
Turbidity (NTU)	NS	1.58	1.4	3.13	0.85	NA	NA	NA	2.3	NA	7.8	0.0	0.0	0.0	0.0	NA	
Dissolved Oxygen (mg/L)	NS	0.00	0.73	0.21	0.00	NA	NA	NA	0.00	NA	0.00	0.00	0.00	0.00	0.00	NA	
Oxidation-Reduction Potential (mV)	NS	150	202	134	207	NA	NA	NA	174	NA	190	221	191	183	271	NA	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	16A														
Sample Number:	SMCL	16A-20170713	16A-20171013	16A-20180507	16A-20181025	DUP-04-20181025	16A	DUP-3	16A	16A_051420	16A	16A	16A	16A	16A	16A
Date Sampled:	⁽¹⁾	7/13/2017	10/13/2017	5/7/2018	10/25/2018	10/25/2018	7/11/2019	7/11/2019	11/19/2019	5/14/2020	9/24/2020	4/26/2021	9/21/2021	5/2/2022	9/7/2022	
Duplicate of:						16A-20181025		16A								
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	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	0.0293	0.0289	0.0242 J	0.0429 J	0.0214 J	0.0101 J	0.0431 J	0.0154 J	0.0096 J	J
Arsenic	0.01	0.003 U	0.0019 J	0.003 U	0.003 U	0.0016 J	0.0017 J	0.0016 J	0.0022	0.0016 J	0.0010 U	0.0016 J	0.0010 U	0.0010 U	0.0013 J	J
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.00076 J	0.000082 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	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	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	U
Calcium	NS	86 J	82 J	64	67	68	61.2	61.4	65.6	75.6	59.9	52.6	55.0	56.4	53.4	
Iron	0.3	31	27 J	20	22	22	23.5	24.2	21.3	22.7	19.1	14.5	15.2	13.3	14.3	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.0017 J	0.00043 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	U
Magnesium	NS	54	49 J	42	42	42	38.4	38.4	39.4	47.4	37.6	34.0	35.0	37.6	33.6	
Manganese	0.05	29 J	32 J	26	25	24	25.1	23.7	21.4	20.8	23.8	19.6	19.9	21.7	18.1	
Nickel ⁽²⁾	0.073	0.0065	0.0061	0.0066	0.0057	0.0065	0.0087 J	0.0083 J	0.0072	0.0057	0.0068	0.0057	0.0065 J	0.0065	0.0068 J	J
Potassium	NS	11	12	10	11	11	10.1	10.1	10.5	11.9	9.65	9.23	8.69	9.50	9.10	
Sodium	NS	52 J	49 J	38	40	41	36	36.2	38.2	46	37.8	32.6	31.6	33.3	30.9	
Zinc	5	0.011 J	0.02 U	0.0099 J	0.011 J	0.055 J	0.0153	0.606	0.10 U	0.0092 J	0.0086	0.0078	0.0120	0.0080	0.0086 J	J
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	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	0.29	0.287	0.24 J	0.4 J	0.295 J	0.247 J	0.253 J	0.269 J	2.00 U	U
Chloride	250	31	31	25	28 J	28 J	25.4	25.5	24.2	24.3	21.0	16.0	15.1	13.9	14.2	
Fluoride	2	0.1 U	0.066 J	0.1 U	1 UJ	1 UJ	0.02	0.02	0.11 J	0.056 J	0.200 U	0.100 U	0.200 U	0.100 U	2.00 U	U
Sulfate	250	510 J	460	440	420 J	420 J	282	283	387	365	360	329	328	331 J	371	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	0.018	0.072	0.05 U	0.05 U	0.006 U	0.006 U	0.11 U	0.18	0.0600 U	0.0372 J	0.0600 U	0.0300 U	0.0600 U	U
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.006 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.0600 U	0.0300 U	0.0600 U	U
Nitrogen, Nitrate-Nitrite	10	0.057	0.025 U	0.032 J	0.025 U	0.025 U	0.012 U	0.012 U	0.10 U	0.18	0.120 U	0.0600 U	0.120 U	0.0600 U	0.120 U	U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	5.9	2.8 U	3.36 U	1.27 U	1.4 U	0.119 U	1.12 J	1.51	0.729 J	J
Gross Beta ⁽⁴⁾	50	9.31	10.8	6.5	9.12	7.72	18.6	15	12.2	9.25	14.8	7.8	9.46	10.6	6.34	
Radium-226 ⁽⁵⁾	5	0.227 U	0.343 J	0.345 U	0.564 U	0.391 U	1.4	1.4	0.354 U	0.241 U	0.8 U	0.989	0.752	0.0442 U	0.151 J	J
Radium-228 ⁽⁵⁾	5	1.14 U	1.33	0.622 J	1.23	0.978 J	1.1	0.8	0.675 U	0.818 U	1.1	0.21	0.48 J	1.05	1.43	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	110	120	64	110 UJ	5 U	103	106	73	77.5	71.7	75.5	61.8	153	72.1	
Total Dissolved Solids	500	890	830	770	730	720	640	668	645	634	631	688	626	202	670	
Total Suspended Solids	NS	49	5.2	12	41	38	20	16.3	4.9	10.5	9.00 J	18.0	8.00	50	4.00 J	J
Field Parameters																
pH (S.U.)	6.5-8.5	6	5.82	5.93	5.95	NA	NA	NA	NA	5.75	5.96	5.65	5.78	5.87	5.35	
Specific Conductivity (mS/cm)	NS	1.14	1.24	1.04	1.13	NA	NA	NA	NA	0.879	0.574	0.674	0.687	0.916	0.710	
Temperature (°C)	NS	21.74	18.2	21.53	17.96	NA	NA	NA	NA	16.69	15.97	16.47	17.43	15.69	16.66	
Turbidity (NTU)	NS	7.83	5.43	9.95	19.2	NA	NA	NA	NA	22.4	5.5	5.3	22.7	9.8	6.1	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	37	-6	47	35	NA	NA	NA	NA	39	8	72	52	39	67	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	18B													
Sample Number:	SMCL	18B-20170712	18B-20171017	18B-20180507	DUP-03-20180507	18B-20181022	18B	18B	18B_051520	18B	18B	18B	18B	18B	
Date Sampled:	⁽¹⁾	7/12/2017	10/17/2017	5/7/2018	5/7/2018	10/22/2018	7/9/2019	11/22/2019	5/15/2020	09/23/2020	4/19/2021	9/21/2021	5/2/2022	8/29/2022	
Duplicate of:					18B-20180507										
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.036 J	0.05 U	0.05 U	0.018 J	0.018 J	0.004 U	0.0469 J	0.013 J	0.0080 U	0.0080 U	0.0400 U	0.0080 U	0.0080 U	
Arsenic	0.01	0.003 U	0.002 J	0.0015 J	0.0015 J	0.003 U	0.001 U	0.0014 J	0.0014 J	0.0010 U	0.0010 J	0.0010 U	0.0010 U	0.0012 J	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	51	46	44	45	41	46.4	52	48.9	47.9	45.7	45.9	44.6	46.9	
Iron	0.3	24	19	19	20	18	22.1	25.9	25.5	25.3	24.4	24.1	25.3	25.4	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.001 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	2.7	2.2	2.4	2.4	2	2.53	2.49	2.36	2.73	2.63	2.52	2.56	2.58	
Manganese	0.05	0.17	0.16	0.15	0.15	0.13	0.136	0.159	0.16	0.171	0.172	0.150	0.174	0.142	
Nickel ⁽²⁾	0.073	0.004 J	0.005 U	0.005 U	0.005 U	0.005 U	0.002 U	0.004 U	0.003 U	0.0016 J	0.0014 J	0.0023 J	0.0015 J	0.0020 U	
Potassium	NS	4.9	5.1	2.9	3	4.5	3.89	2.22	2.42	2.04	1.88	2.10	1.75	1.88	
Sodium	NS	14	13	8.2	8.3	11	11	7.81	7.41	7.99	7.31	7.76	7.21	7.34	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.002 U	0.02 U	0.015 U	0.0035	0.0013 J	0.0144	0.0056	0.0020 U	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.22 J	0.11 J	0.22 J	0.22 J	0.23 J	0.0968	0.50 U	0.17 J	0.200 U	0.0551	0.200 U	0.100 U	2.00 U	
Chloride	250	15	15	8.5	8.4	16	10.8	7.2	7	4.51 J	5.71	4.89 J	3.92	4.58	
Fluoride	2	0.089 J	0.04 J	0.07 J	0.071 J	0.067 J	0.0309	0.074 J	0.088 J	0.200 U	0.0325	0.200 U	0.100 U	2.00 U	
Sulfate	250	0.53 J	0.88 U	0.97 J	0.99 J	1	0.394 J	2.1	7.4	2.00 U	0.100 U	2.00 U	1 UJ	2.00 U	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0027 J	0.03 J	0.031 J	0.041 J	0.0196 J	0.11 U	0.1 U	0.0600 U	0.00300 UJ	0.0600 U	0.0300 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.05 U	0.015 J	0.036	0.0081 J	0.120 U	0.00857 J	0.0600 U	0.0300 U	0.00300 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 UJ	0.025 U	0.025 U	0.071	0.0346 J	0.10 U	0.095 U	0.0600 U	0.00857 J	0.120 U	0.0600 U	0.00600 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	0.363 U	0.106 U	0.827 U	2.64 J	1.16 U	1.7	3.39 U	3.45 J	1.5 U	0.463 J	0.798 J	1.06	1.38	
Gross Beta ⁽⁴⁾	50	8.61	2.76 J	2.2 J	2.06 J	3.3 J	4.8	2.65 U	2.4 U	3.2	1.18 J	1.93 J	3.95	1.85	
Radium-226 ⁽⁵⁾	5	0.62 J	0.316 J	0.42 J	0.534 J	0.525 U	0.7	1.18	0.592 J	0.8	-0.7 U	0.4	0.138 J	0.159 J	
Radium-228 ⁽⁵⁾	5	1.19	0.472 U	0.374 J	0.567 J	0.316 U	0.6 U	0.126 U	1.24 U	0.9	0.347	4.51	1.14	0.999	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	150	140	160 J	89 J	140	144	143	137	162	145	148	153	149	
Total Dissolved Solids	500	190 U	200 J	190	250	210	130	203	191	164	39.0	202	202	189	
Total Suspended Solids	NS	55	41	47	47	43	46	49.7	44	52.0	23.0	47.7	50	47.0	
Field Parameters															
pH (S.U.)	6.5-8.5	7.24	6.98	6.78	NA	6.98	NA	NA	6.82	7.06	6.87	6.82	6.89	6.53	
Specific Conductivity (mS/cm)	NS	0.335	0.415	0.406	NA	0.372	NA	NA	0.342	0.238	0.305	0.311	0.370	15.84	
Temperature (°c)	NS	24.21	13.6	17.97	NA	17.07	NA	NA	15.95	16.77	15.43	15.17	14.87	15.84	
Turbidity (NTU)	NS	29.9	14.3	3.03	NA	9.15	NA	NA	0.0	3.3	0.0	0.1	0.0	1.9	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	NA	1.9	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-111	-162	-133	NA	-144	NA	NA	-159	-181	-109	-177	-166	-77	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	21D												
Sample Number:	SMCL	21D-20170710	21D-20171004	21D-20180502	21D-20181024	21D	21D	21D_051420	21D	21D	21D	21D	21D	21D
Date Sampled:	⁽¹⁾	7/10/2017	10/4/2017	5/2/2018	10/24/2018	7/15/2019	11/26/2019	5/14/2020	9/16/2020	4/20/2021	9/27/2021	5/11/2022	9/1/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	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	1.48	0.95	0.811	4.53	2.14	1.29	1.83	1.93	
Arsenic	0.01	0.0016 J	0.003 U	0.003 U	0.003 U	0.0034 U	0.010 U	0.00053 J	0.0028	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0094	0.0012	0.00074	0.00032 J	0.002 U	0.005 U	0.0005 U	0.0009 J	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.015 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	26	19 J	52	66	49.7	82.5	127	65.5	58.5	98.2	38.4	30.2	
Iron	0.3	12	3.7 J	1.7	1.4	1.73	0.306	0.126	3.27	0.763	1.07	1.39	1.55	
Lead	0.015	0.016	0.0025 U	0.0025 U	0.0025 U	0.0006 J	0.010 U	0.00041 J	0.0050	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	1.3	0.51 J	0.24 J	0.14 J	0.26	2.5 U	0.25 U	0.481	0.147	0.196	0.208	0.277	
Manganese	0.05	0.12	0.093 J	0.047	0.019 J	0.0443	0.0065 J	0.004	0.0648	0.0280 J	0.0315	0.0384 J	0.0333	
Nickel ⁽²⁾	0.073	0.02	0.0027 J	0.005 U	0.0032 J	0.0043 J	0.020 U	0.0013 J	0.0116	0.0107	0.0030 J	0.0019 J	0.0020 U	
Potassium	NS	37	26	40	40 J	33.6	38.8	39.1	29.3	27.0	47.7	20.8	19.3	
Sodium	NS	60	47 J	80	82	76.1	82.3	92.3	68.3	66.6	122	53.7	46.6	
Zinc	5	0.024	0.02 U	0.02 U	0.02 U	0.0087 J	0.10 U	0.015 U	0.0062	0.0066	0.0825	0.0037	0.0020 U	
Anions		mg/L	mg/L	mg/L	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	0.1 U	0.5 U	0.52	0.207	0.24 J	0.58	0.267 J	0.263 J	0.500 U	0.200 U	2.00 U	
Chloride	250	11	8	27	38	44	54.6	67.7	53.6	53.3	39.7	23.7	32.2	
Fluoride	2	0.22	0.18 J	0.2	0.26 J	0.228	0.34	0.31	0.278	0.247	0.500 U	0.228 J	2.00 U	
Sulfate	250	15	14	28	28 J	28.5	37.1	40.5	38.5	41.5	37.6	38.7	43.8	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	0.0021 J	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 UJ	0.0300 U	0.150 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 R	0.006 U	0.010 U	0.005 U	0.120 U	0.0300 U	0.150 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 UJ	0.025 U	0.025 U	0.025 UJ	0.012 U	0.10 U	0.095 U	0.0600 UJ	0.0600 U	0.300 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	4.2	2.26 U	1.04 U	12.7	2.15 J	1.03 J	0.551 J	-0.147 U	
Gross Beta ⁽⁴⁾	50	93.1	28.4	32.3	35.7	43.8	35	29	45.7	22.7	18.5	20.8	14.4	
Radium-226 ⁽⁵⁾	5	1.44 U	0.591 J	0.546 J	0.815 U	1	0.87	1.11	0.6	-0.0938 U	0.438 J	0.219 J	0.137 J	
Radium-228 ⁽⁵⁾	5	1.4	0.225 U	0.213 U	0.54 U	0.8 U	1.14 U	-0.366 U	0.9	0.0338	-0.827 U	0.141 U	0.883	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	180	150	110	240	212	350	427	192	227	199	166	202	
Total Dissolved Solids	500	1100 J	450	420	450	502	523	569	337	454	406	331	348	
Total Suspended Solids	NS	200	230	80	77 J	104	17.7	5.4	103	14.0	3.67	15.0	8.00 J	
Field Parameters														
pH (S.U.)	6.5-8.5	10.68	10.68	11.26	11.91	NA	NA	12.75	11.57	12.85	11.89	11.70	11.05	
Specific Conductivity (mS/cm)	NS	0.17	0.415	1.07	1.34	NA	NA	2.42	0.762	1.01	0.821	0.725	0.480	
Temperature (°C)	NS	18.99	13.93	14.84	13.76	NA	NA	13.69	14.4	13.56	14.14	13.41	14.37	
Turbidity (NTU)	NS	>1000	535	121	111	NA	NA	8.0	42.3	20.9	4.3	20.1	12.7	
Dissolved Oxygen (mg/L)	NS	0.00	0.44	0.65	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-53	-159	-300	-220	NA	NA	-205	-65	-238	-187	-219	-30	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	21S													
Sample Number:	SMCL	21S-20170710	21S-20171004	21S-20180502	21S-20181024	21S	21S	DUP-112619	21S_051420	21S	21S	21S	21S	21S	DUP-3
Date Sampled:	⁽¹⁾	7/10/2017	10/4/2017	5/2/2018	10/24/2018	7/15/2019	11/26/2019	11/26/2019	5/14/2020	09/16/2020	4/20/2021	9/27/2021	5/11/2022	9/1/2022	9/1/2022
Duplicate of:								21S							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	55	40 J	50	52	51.2	53.5	52.6	54.8	48.0	43.1	41.2	40.8	39.0	39.4
Arsenic	0.01	0.0063	0.0065	0.017	0.0052	0.005	0.031	0.0305	0.0201	0.0010 U	0.0041	0.0010 J	0.0010 U	0.0010 U	0.00100 U
Beryllium	0.004	0.0068	0.0073	0.0068	0.0075	0.0055 J	0.0071	0.007	0.0069	0.0027	0.0047	0.0050 J	0.0035	0.0020 U	0.0020 U
Cadmium	0.005	0.0079	0.0038	0.004	0.0057	0.0042	0.0046 J	0.0049 J	0.0038	0.0039	0.0037	0.0036 J	0.0037	0.0029 J	0.0028 J
Calcium	NS	210	170 J	210	210	196	227	227	270	183	176	184	175	172	173
Iron	0.3	290	290 J	270	260	269	294	291	375	261	247	249	244	248	249
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 J	0.0033 J	0.0031 J	0.0013 J	0.0039	0.00055 J	0.0020 U	575 U	0.0020 U	0.0020 U
Magnesium	NS	190	160 J	200	200	202	211	207	254	184	177	175	178	170	171
Manganese	0.05	170	170 J	170	170 J	165	183	184	159	151	141	136	138	119	123
Nickel ⁽²⁾	0.073	0.37	0.39 J	0.4	0.39 J	0.388	0.515	0.514	0.493	0.346	0.252	0.376	0.256	0.0793	0.0869
Potassium	NS	11	9.3	12	12 J	12.1	10.3	10.2	12.3	11.2	11.3	10.3	10.8	10.8	11.0
Sodium	NS	360	290 J	360	360	374	401	398	477	360	315	327	330	301	308
Zinc	5	1.1	1 J	1.1	1.1	1	1.66	1.59	1.75	0.578	0.652	0.825	0.0372	0.815	0.818
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	2.6	2.6	2.8	5 U	2.19	1.2	1.2	2.6	2.75	2.62	2.47	2.19	2.55 J	NA
Chloride	250	610	610	500	560	443	609	552	528	543	570	498	394	505	NA
Fluoride	2	2.5 U	0.084 J	0.24	0.61 J	0.0424	0.31	0.29	0.31	0.430	0.301	0.500 U	0.329 J	2.00 U	NA
Sulfate	250	1 U	2500	3400	2900 J	2890	2530	2960	6580	1770	2730	2810	2440	2850	NA
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.377	0.11 U	0.11 U	0.1 U	0.0600 UJ	0.0300 U	0.150 U	0.0600 U	0.0600 U	NA
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 R	0.006 U	0.010 U	0.010 U	0.0049 J	0.0600 UJ	0.0300 U	0.150 U	0.0600 U	0.0600 U	NA
Nitrogen, Nitrate-Nitrite	10	0.025 UJ	0.025 U	0.025 U	0.086 J	0.377	0.10 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.120 U	0.120 U	NA
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	1.46 U	10 U	2.14 U	15.1 U	35.6	16.8	20	22.9	21.0	17.4 J	28.6	14.4	10.4 J	11.6
Gross Beta ⁽⁴⁾	50	1.42 U	41.4	14.3 U	20.4	48.3	28.5	28.3	21.3	53.6	29.2	46.8	24.1	18.0	20.0
Radium-226 ⁽⁵⁾	5	0.208 U	1.44	1.58	1.77	8.5	1.1	1.51	1.36	6.0	9.91	1.26	3.72	1.41	1.20
Radium-228 ⁽⁵⁾	5	-0.486 U	10.2	9.55	10.1	7.4	14.9	15.4	7.48	8.4	0.509	11.4	9.76	9.99	8.99
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	4 U	64.3	39.8	5.00 U	5.00 UJ	5.00 U	NA
Total Dissolved Solids	500	4700 J	5700	4600	4600	5000	2220	7.0 J	4480	4520	4300	4570	4760	4360	NA
Total Suspended Solids	NS	5.6	2.5	1.1	1 U	2.6	2.6 J	2.1 J	3 J	2.00 U	2.00 U	1.50 J	1.00 J	7.00 J	NA
Field Parameters															
pH (S.U.)	6.5-8.5	3.34	3.49	3.86	3.67	NA	NA	NA	3.46	3.6	3.52	3.51	3.47	3.27	NA
Specific Conductivity (mS/cm)	NS	4.6	4.93	4.59	5.03	NA	NA	NA	5.96	4.53	4.76	4.69	5.94	4.70	NA
Temperature (°c)	NS	19.87	17.98	20.22	13.15	NA	NA	NA	14.35	13.87	13.30	13.29	12.88	13.83	NA
Turbidity (NTU)	NS	2.98	2.85	1	0.81	NA	NA	NA	9.5	0.00	0.0	1.50	0.0	0.0	NA
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA
Oxidation-Reduction Potential (mV)	NS	299	236	277	265	NA	NA	NA	251	255	294	315	332	356	NA

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
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	CSW-5	CSW-5	CSW-5_052220	CSW-5	CSW-5	CSW-5	CSW-5	CSW-5	
Date Sampled:	⁽¹⁾	7/12/2017	7/12/2017	10/17/2017	5/9/2018	5/9/2018	10/25/2018	7/16/2019	11/21/2019	5/22/2020	09/22/2020	4/19/2021	9/30/2021	5/10/2022	8/29/2022	
Duplicate of:			CSW-5-20170712			CSW-5-20180509										
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.171	0.253	0.42 J	0.0866	0.304	0.231	0.0080 U	0.0080 U	
Arsenic	0.01	0.0032	0.0035	0.0033	0.0027 J	0.0027 J	0.0026 J	0.001 J	0.0036	0.0038 J	0.0031	0.0045	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.000082 J	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0005	0.00049 J	0.00036 J	0.0004 J	0.00042 J	0.00017 J	0.0004 U	0.00098 J	0.0014 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	260	260	230	200	190	200	195	210	183	188	185	179	170 J	168	
Iron	0.3	630	590	620	590	610	560	513	618	504	540	518	489	486	482	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0025	0.0025 J	0.0020 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	260	270	200	180	170	180	196	195	167	185	185	166	169	163	
Manganese	0.05	170	160	180	150	160	150	160	150	128	138	130	113	119	106	
Nickel ⁽²⁾	0.073	0.24	0.25	0.2	0.18	0.18	0.18	0.193	0.183	0.21	0.172	0.119	0.169	0.0963	0.142	
Potassium	NS	19	20	17	14	14	15	15.8	14.8	17	15.6	15.1	14.0	14.5	15.6	
Sodium	NS	440	450	350	300	290	310	348	343	281	332	304	286	301	299	
Zinc	5	0.22	0.23	0.18	0.17 J	0.17 J	0.18	0.178	0.185	0.518 U	0.144	0.134	0.121	0.101	0.143	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	1.86	0.98	2.1	2.45	2.36	0.500 U	1.83	2.05 J	
Chloride	250	480	490	500	450	430	440 J	376	422	389	454	480	69.4	320	362	
Fluoride	2	1 U	1 U	0.06 U	1 U	1 U	0.1 UJ	0.02	0.28	0.34	0.200 U	0.100 U	0.737	0.200 U	2.00 U	
Sulfate	250	3200	3200	2800	3000	3200	3200 J	2400	3730	2970	1810	2980	246	1410	2030	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	ND	0.05 U	0.05 U	0.05 U	0.0662	0.11 U	0.12	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.013	0.0038 J	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.00300 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 U	0.025 UJ	0.025 U	0.025 U	0.081 U	0.0662	0.10 U	0.12	0.120 U	0.0600 U	0.300 U	0.120 U	0.00600 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	1.23 U	12.2 U	5.73 U	29.9 U	14.4 U	-2.08 U	8.2 U	-2.62 U	4.84 U	6.2 U	-2.37 U	0.750 U	19.0	-0.118 U	
Gross Beta ⁽⁴⁾	50	17.5 J	9.7 U	1.02 U	11.8 U	19 J	9.4 U	26.1	18.2	16.3	26.3	-3.07 U	16.6	31.3	0.271 J	
Radium-226 ⁽⁵⁾	5	0.497 J	0.763 J	0.399 J	0.289 J	0.254 J	0.605 J	2	0.469 U	0.551 J	1.7 U	2.32	0.290	0.603	0.111 U	
Radium-228 ⁽⁵⁾	5	1.92	1.56	1.28 U	1.97	1.19	1.84	1.5	0.65 U	2.07 J	1.4	0.557	1.52	1.86	0.872	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	78	82	120	15 J	5 U	94 U	79.5	16	102	115	45.2	38.3	81.4	46.0	
Total Dissolved Solids	500	4600	6400	5300 J	4900	4900	4900	5050	4180	4620	4490	4300	4730	4680	4230	
Total Suspended Solids	NS	130	140	10 U	33	31	72	43	87.7	61	71.0	15.0	43.0	39.0	19.0	
Field Parameters																
pH (S.U.)	6.5-8.5	5.55	NA	5.31	5.29	NA	5.48	NA	NA	5.39	5.41	5.46	5.35	5.54	5.25	
Specific Conductivity (mS/cm)	NS	3.83	NA	5.34	4.98	NA	4.84	NA	NA	4.84	4.35	4.58	4.67	5.79	4.27	
Temperature (°c)	NS	27.88	NA	14.47	16.9	NA	14.56	NA	NA	15.98	15.98	15.02	14.75	14.94	16.08	
Turbidity (NTU)	NS	9.28	NA	1.67	3	NA	5.51	NA	NA	39.2	0.00	9.9	13.90	0.0	0.6	
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.93	0.00	NA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	62	NA	36	25	NA	67	NA	NA	41	33	56	43	35	98	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-7													
Sample Number:	SMCL	CSW-7-20170711	CSW-7-20171017	DUP-04-20171017	CSW-7-20180508	CSW-7-20181024	CSW-7	CSW-7	CSW-7_052020	CSW-7		CSW-7	CSW-7	CSW-7	CSW-7
Date Sampled:	⁽¹⁾	7/11/2017	10/17/2017	10/17/2017	5/8/2018	10/24/2018	7/10/2019	11/21/2019	5/20/2020	09/22/2020	4/27/2021	9/20/2021	5/4/2022	8/31/2022	
Duplicate of:				CSW-7-20171017											
Total Inorganics		mg/L	mg/L	mg/L	mg/L	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	0.282	0.202	0.22	J	0.220	0.192	0.338	0.445	
Arsenic	0.01	0.0042	0.0053	0.0041	0.0044	0.0038	0.0033	0.0071	0.0046	J	0.0039	0.0047	0.0016	J	
Beryllium	0.004	0.0041	0.004	0.0042	0.0035	0.0027	0.0042	J	0.0058	0.0069	J	0.0056	0.0059	0.0098	
Cadmium	0.005	0.00049	J	0.0004	U	0.0004	U	0.0004	U	0.0030	U	0.0004	U	0.0004	
Cadmium															
Cadmium															
Calcium	NS	300	310	290	240	180	242	300	318	227	219	222	229	228	
Iron	0.3	320	320	300	280	220	269	321	323	254	242	248	254	256	
Lead	0.015	0.0025	U	0.0025	U	0.0025	U	0.0004	U	0.00090	J	0.0014	U	0.0004	
Magnesium	NS	250	250	230	210	140	215	255	272	195	189	186	199	193	
Manganese	0.05	230	260	260	190	660	J	213	222	181	176	159	152	161	
Nickel ⁽²⁾	0.073	1.4	1.6	1.5	1.3	0.85	J	1.35	1.57	2.03	1.19	0.944	1.12	0.766	
Potassium	NS	13	13	13	11	8.2	J	12	11.8	12.1	10.6	10.2	9.59	10.6	
Sodium	NS	410	420	390	340	240	365	439	456	344	315	301	327	302	
Zinc	5	4	4.3	4	3.6	2.4	3.32	4.95	6.88	U	3.14	2.91	2.80	0.0374	
Anions		mg/L	mg/L	mg/L	mg/L	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	1.21	1.3	2.5	2.49	2.15	2.20	
Chloride	250	730	720	790	550	500	490	657	642	569	551	499	477	522	
Fluoride	2	5	U	0.06	U	0.06	U	0.077	J	1	U	0.01	0.093	J	
Sulfate	250	3000	2500	2500	1	U	1800	J	2810	3200	2860	1560	2260	2430	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.0018	J	0.05	U	0.05	U	0.0554	0.11	U	0.1	U	
Nitrogen, Nitrite	1	ND	ND	ND		0.05	U	0.05	R	0.003	U	0.0032	J	0.005	
Nitrogen, Nitrate-Nitrite	10	0.25	U	0.025	UJ	0.025	UJ	0.025	U	0.077	J	0.0554	0.10	U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	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	15.1	11.8	2.6	
Gross Beta ⁽⁴⁾	50	14	10.6	U	1.54	U	15.4	11.7	27.2	17.1	23.4	33.3	9.72	J	
Radium-226 ⁽⁵⁾	5	2.14	1.78	1.59	1.89	1.87	3.8	0.946	2.56	4.7	5.64	1.63	1.79	2.17	
Radium-228 ⁽⁵⁾	5	4.81	4.13	3.37	4.31	3.31	4.1	4.67	4.67	4.4	2.49	3.69	3.23	4.56	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	21	U	58	57	5	U	5	U	50.6	37	47.5	65.0	33.9	
Total Dissolved Solids	500	4700	5400	J	5400	J	4200	3500	4660	4570	4750	4020	4220	J	
Total Suspended Solids	NS	30	4.6	U	1	U	13	94	J	41	15.9	10.7	2.00	U	
Field Parameters															
pH (S.U.)	6.5-8.5	5.43	5.39	NA	5.38	5.3	NA	NA	4.91	5.31	5.24	5.05	5.37	5.09	
Specific Conductivity (mS/cm)	NS	4.9	5.32	NA	4.81	5.04	NA	NA	5.56	3.98	4.52	4.7	6.09	4.55	
Temperature (°c)	NS	22.72	17.57	NA	21.06	16.68	NA	NA	15.62	17.28	14.89	14.73	14.24	15.65	
Turbidity (NTU)	NS	11.4	2.22	NA	6.2	16.5	NA	NA	1.5	8.5	14.1	0.7	31.2	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	NA	0.00	0.00	NA	NA	0.00	0.00	0.00	17.10	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	78	24	NA	74	97	NA	NA	91	52	69	44	58	149	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-9													
Sample Number:	SMCL	CSW-9-20170712	CSW-9-20171006	CSW-9-20180501	CSW-9-20181023	CSW-9	CSW-9	CSW-9_051320	CSW-9	CSW-9	DUP-3-CSW-9	CSW-9	CSW-9	CSW-9	
Date Sampled:	⁽¹⁾	7/12/2017	10/6/2017	5/1/2018	10/23/2018	7/10/2019	11/18/2019	5/13/2020	09/29/2020	4/26/2021	4/26/2021	9/30/2021	5/2/2022	9/7/2022	
Duplicate of:															
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.18	0.036 J	0.045 J	0.064 J	0.115	0.0709	0.0469 J	0.0791	0.0360 J	0.0329 J	0.123 J	0.0199 J	0.0080 U	
Arsenic	0.01	0.003 U	0.0023 J	0.003 U	0.0022 J	0.001 U	0.0012 J	0.00054 J	0.0010 J	0.0015 J	0.0013 J	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0088	0.0088 J	0.0086	0.0081	0.0069 J	0.0113	0.0095	0.0018 J	0.0063	0.0066	0.0076 J	0.0055	0.0059 J	
Cadmium	0.005	0.00057	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	320	270 J	290	270	254	303	274	235	259	259	265	259	264	
Iron	0.3	620	620 J	610	660	572	611	630	648	599	596	614	611	633	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0116	0.00032 U	0.00050 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	260	200 J	210	210	206	221	185	190	206	206	203	209	207	
Manganese	0.05	180	190 J	180	190	206	204	172	143	169	169	168	170	172	
Nickel ⁽²⁾	0.073	0.59	0.53 J	0.53	0.48	0.531	0.6	0.468	0.305	0.369	0.347	0.532	0.429	0.285	
Potassium	NS	16	13 J	14	14	14.3	14.3	14	12.4	13.8	13.9	13.3	14.0	14.1	
Sodium	NS	350	350 J	370	360	367	415	332	335	374	378	362	368	357	
Zinc	5	0.02	0.01 J	0.017 J	0.016 U	0.0315	0.123	0.0119 J	0.0024	0.0239	0.0235	0.0215	0.0203	0.0221	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	3.1 J	2.6	2.4	50 U	1.03	2.2	2.8	0.115	2.53	2.57	2.61	2.43	3.40 J	
Chloride	250	650	680	590	630	500	660	562	31.7	639	646	641	562	604	
Fluoride	2	1 U	0.06 U	0.1 UJ	10 U	0.01	0.19 J	0.1 J	0.0100 U	0.100 U	0.100 U	0.500 U	0.100 U	2.00 U	
Sulfate	250	3400	2900	2800	2900	3190	3280	7040	128	1720 J	2870 J	3060	3040 J	2700	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.151	0.11 U	0.1 U	0.00300 U	0.0300 U	0.0300 U	0.150 U	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.003 U	0.010 U	0.019	0.00300 U	0.0300 U	0.0300 U	0.150 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.08 UJ	0.151	0.10 U	0.095 U	0.00600 U	0.0600 U	0.0600 U	0.300 U	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	13 U	-1.42 U	-3.05 U	6.01 U	10.4	8.12 U	4.08 U	6.3 U	-6 U	-3.34 U	3.31 U	5.11 J	-9.74 U	
Gross Beta ⁽⁴⁾	50	4.02 U	13.6 U	7.08 U	10.7 U	17.8	12.6	9.01 U	17.7	-0.274 U	11.4 J	15.1 J	19.4	-12.3 U	
Radium-226 ⁽⁵⁾	5	0.854 J	0.728 J	0.662 J	0.973 U	1.8	1.92	0.768 J	0.8	0.782	1.33	0.712	0.872	0.557 J	
Radium-228 ⁽⁵⁾	5	1.32	2.11 U	1.27	0.861 J	2	1.49	1.01 U	1.1	0.72	0.856	2.42	1.70	1.24	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	43	22	83	5 U	38.5	30	54	9.31 J	9.85 J	5.84 J	27.2	23.7	5.00 U	
Total Dissolved Solids	500	5300	5600	5100	5400	5740	5420	5050	4290	5980	5820	5910	6000	5840	
Total Suspended Solids	NS	86	54	6.1	54	48	12.8	24	162	59.0	62.0	49.0	18.0	12.0	
Field Parameters															
pH (S.U.)	6.5-8.5	5.62	5.09	5.55	5.54	NA	NA	5.42	5.7	5.36	NA	5.28	5.45	5.20	
Specific Conductivity (mS/cm)	NS	4.04	5.21	5.75	5.38	NA	NA	5.84	4.21	5.64	NA	6.07	6.95	6.06	
Temperature (°c)	NS	27.22	19.55	15.24	16.18	NA	NA	14.80	14.52	14.82	NA	13.88	14.02	15.01	
Turbidity (NTU)	NS	3.92	1.44	2.01	1.6	NA	NA	3.4	6.9	0.0	NA	0.0	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.6	0.00	0.00	NA	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	54	40	26	43	NA	NA	7	-13	65	NA	28	9	73	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-10												
Sample Number:	SMCL	CSW-10-20170628	CSW-10-20171003	CSW-10-20180426	CSW-10-20181017	CSW-10	CSW-10	CSW-10_051320	CSW-10	CSW-10	CSW-10	CSW-10	CSW-10	CSW-10
Date Sampled:	⁽¹⁾	6/28/2017	10/3/2017	4/26/2018	10/17/2018	7/10/2019	11/18/2019	5/13/2020	9/24/2020	4/28/2021	9/29/2021	5/10/2022	8/31/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	37	31	34	35	35.7	32.7	36.3	36.1	35.4	36.3	36.1	33.4	
Arsenic	0.01	0.0058	0.0093	0.011	0.011	0.0042	0.0150 J	0.0125	0.0055	0.0031	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.023	0.02	0.02	0.023	0.0154	0.0211	0.0202	0.0204	0.0090	0.0171	0.0107	0.0054 J	
Cadmium	0.005	0.007	0.0032	0.0024	0.0027	0.0027	0.0022 J	0.002 J	0.0026	0.0027	0.0027 J	0.0031	0.0026 J	
Calcium	NS	300	270	280	290	265	275	280	260	250	259	248	238	
Iron	0.3	460	510	520	500	423	483	366	438	417	435	420	408	
Lead	0.015	0.0054	0.0051	0.0044	0.0046	0.0041	0.0064	0.0109	0.003	0.0033	0.0029 J	0.0029	0.0029 J	
Magnesium	NS	270	220	230	240	233	224	163	224	217	217	230	209	
Manganese	0.05	210	240	230	240	204	206	181	202	190	192	191	161	
Nickel ⁽²⁾	0.073	0.63	0.53	0.52	0.51	0.472	0.502	0.555	0.483	0.419	0.489	0.315	0.102	
Potassium	NS	20	17	19	20	19.8	18	14.5	19.6	18.4	17.5	18.5	17.5	
Sodium	NS	440	420	510	480	485	468	330	473	453	447	458	448	
Zinc	5	1.6	1.4	1.3	1.3	1.22	1.54	1.68	1.16	1.15	1.05	0.0421	1.19	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	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	1.32	2.3	3.2 J	3.03	3.14	3.37	2.58	3.30 J	
Chloride	250	770	790	660	690	828	649	651	804	697	808	617	683	
Fluoride	2	1.6 J	0.25	1.4	10 U	0.467	1.5	1.3 J	1.28	0.100 U	2.30	1.35	2.00 U	
Sulfate	250	3300	3200	3700	3300	3470	3240	6440 J	2760	3840	3740	1720	2880	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	NA	0.05 U	0.137	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 UJ	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	NA	0.05 UJ	0.003 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 UJ	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 U	0.025 U	0.042 U	0.137	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 UJ	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	60	33.6	22 U	38.4	19.2	32.3	30.3	42.8	
Gross Beta ⁽⁴⁾	50	28	57.4	39.9	34.1	96.7	37.7	51.8	89.2	36.6	70.9	61.1	38.4	
Radium-226 ⁽⁵⁾	5	1.23	1.21	1.3	1.8	9.5	1.79	0.918 J	7.3	20.2	1.89	2.47	3.34	
Radium-228 ⁽⁵⁾	5	10.8	0.676 J	14.1	17.2	15.3	21.8	23.2	16.0	1.17	30.5	17.7	20.6	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	4 U	24.6	11.4	26.4	5.00 UJ	23.8	
Total Dissolved Solids	500	6000	6600	6200	6100	6280	4860	5290	6080	5750	6360	6160	5750	
Total Suspended Solids	NS	23	15	11	23	6	121	30.8	12.0 J	10.0 U	31.4	1.00 J	37.0	
Field Parameters														
pH (S.U.)	6.5-8.5	3.92	3.72	4.08	3.98	NA	NA	3.92	3.96	3.72	3.91	4.00	3.62	
Specific Conductivity (mS/cm)	NS	6.13	6.3	5.78	6.4	NA	NA	6.12	5.6	6.01	6.01	7.78	5.94	
Temperature (°C)	NS	14.83	15.99	17.99	14.84	NA	NA	15.02	17.12	17.13	18.09	16.50	16.05	
Turbidity (NTU)	NS	5.3	9.92	11.7	17.9	NA	NA	15	55.5	0.0	91	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	219	175	183	226	NA	NA	196	218	263	248	238	311	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-13															
Sample Number:	SMCL	CSW-13-20170630	CSW-13-20171003	CSW-13-20180502	CSW-13-20181019	CSW-13	DUP-4	CSW-13	DUP-112219	CSW-13_051420	CSW-13	CSW-13	CSW-13	CSW-13	DUP-1	CSW-13	
Date Sampled:	⁽¹⁾	6/30/2017	10/3/2017	5/2/2018	10/19/2018	7/15/2019	7/15/2019	11/22/2019	11/22/2019	5/14/2020	9/17/2020	4/20/2021	9/27/2021	5/3/2022	5/3/2022	9/8/2022	
Duplicate of:							CSW-13		CSW-13						CSW-13		
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	1.3	0.17	0.2	0.64	3.07	3.06	0.652	0.876	0.755	0.530	2.15	1.69	1.43	1.44	1.03	
Arsenic	0.01	0.0031	0.0022 J	0.0024 J	0.0029 J	0.0016 J	0.0015 J	0.0029	0.0032	0.0025	0.0010 U	0.0014 J	0.0011 J	0.0013 J	0.0015 J	0.0014 J	
Beryllium	0.004	0.003	0.0004 U	0.00069	0.0018	0.0037 J	0.0039 J	0.0018	0.0023	0.0018	0.0018 J	0.0035	0.0030 J	0.0028	0.0026	0.0024 J	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0003 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	25	19	20	17	24.4	24.7	21.3	19.9	25.2	13.4	19.9	18.0	17.1	17.4	12.5	
Iron	0.3	57	39	47	43	74.8	75.7	58.1	57.5	72	41.1	62.3	58.8 U	56.2	57.1	39.6	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.00017 J	0.00017 J	0.00059 J	0.0004 U	0.0004 U	0.0020	0.0004 U	0.0004 U	0.0020 U	
Magnesium	NS	14	8.8	10	9.3	19.1	18.9	12.3	12.3	13.3	9.21	14.6	12.9	12.3	12.5	8.83	
Manganese	0.05	2.6	1.7	1.9	1.7	3.25	3.18	2.28	2.26	3.23	1.58	2.37	2.06	1.96	1.99	1.31	
Nickel ⁽²⁾	0.073	0.053	0.019	0.026	0.033	0.0787	0.0771	0.0337	0.0392	0.0401	0.0317	0.0616	0.0648	0.0433	0.0429	0.0392	
Potassium	NS	3.2	2.6	2.9	2.4	2.55	2.52	2.62	2.4	2.78	2.27	2.16	1.99	2.22	2.26	1.86	
Sodium	NS	39	27	32	30	51.3	52.1	36.1	37.9	36.2	35.2	42.5	39.5	43.0	43.7	33.3	
Zinc	5	0.16	0.034	0.074	0.11	0.323	0.319	0.134	0.166	0.139	0.124	0.241	0.238	0.19	0.188	0.175	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.26 J	0.16 J	0.5 U	0.38 J	0.262	0.256	0.50 U	0.50 U	0.28 J	0.232 J	0.291 J	0.500 U	0.214 J	0.239 J	2.00 U	
Chloride	250	81	53	54	61	70.1	70	62.1	64.5	59.1	69.2	87.1	63.9	66.0	66.6	72.2	
Fluoride	2	0.14	0.083 J	0.14	0.083 J	0.067	0.0727	0.2	0.21	0.16 J	0.200 U	0.100 U	0.500 U	0.100 U	0.100 U	2.00 U	
Sulfate	250	45	81	180	190	239	238	194	195	158	119	289	195	161	161	145	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0017 J	0.05 U	0.05 U	0.006 U	0.006 U	0.11 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.0300 U	0.206	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 UJ	0.006 U	0.006 U	0.010 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.01 J	0.012 U	0.012 U	0.10 U	0.100 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.0600 U	0.0600 U	0.206 J	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	1.29 U	0.87 U	1.41 U	2.69 U	7.7	4.6	1.55 U	3.63 U	2.25 U	2.5	4.78	4.08	0.823	3.36	3.59	
Gross Beta ⁽⁴⁾	50	4.5 U	2.38 J	3.07 J	2.03 J	3.1	3.4	1.55 U	1.43 U	4.78 J	4.8	3.2	7.47	6.07	5.87	6.14	
Radium-226 ⁽⁵⁾	5	0.564 J	0.33 J	0.296 J	0.647 U	0.2	1.8	1.56	1.1	0.773 J	0.9	-0.389 U	0.716	1.15	1.63	0.683	
Radium-228 ⁽⁵⁾	5	0.204 U	0.38 U	-0.00193 U	0.254 U	0.7 U	0.7 U	1.65	1.22 U	0.68 U	0.8 U	0.732	1.25	0.589 J	1.59	0.290 J	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	33	5 U	5 U	33	5 U	5 U	40	23	52.5	5.00 U	6.79 J	6.98 J	6.33 J	7.69 J	5.40 J	
Total Dissolved Solids	500	470	320	340	340	739	704	372	373	416	334 J	640	528	585	552	314	
Total Suspended Solids	NS	38	29	7	8.1	3.2	4	7.8	6.1	11.8	2.00 U	2.00 U	2.00 J	2.80	2.40	2.00 U	
Field Parameters																	
pH (S.U.)	6.5-8.5	5.8	5.67	6.14	5.4	NA	NA	NA	NA	5.88	5.35	4.80	4.94	5.39	NA	4.17	
Specific Conductivity (mS/cm)	NS	0.577	0.55	0.562	0.531	NA	NA	NA	NA	0.672	0.316	0.613	0.576	0.708	NA	0.478	
Temperature (°c)	NS	17.85	16.3	16.35	15.66	NA	NA	NA	NA	14.50	14.24	13.82	13.53	13.40	NA	14.21	
Turbidity (NTU)	NS	3.61	1.53	7.31	1.15	NA	NA	NA	NA	24.2	0.00	0.1	0.00	0.0	NA	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	0.00	
Oxidation-Reduction Potential (mV)	NS	46	-54	-30	54	NA	NA	NA	NA	-101	29	144	101	83	NA	215	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-27															
Sample Number:	SMCL	CSW-27-20170714	DUP-04-20170714	CSW-27-20171011	CSW-27-20180427	CSW-27-20181029	CSW-27	CSW-27	CSW-27_051520	CSW-27	DUP-1	CSW-27	CSW-27	CSW-27	CSW-27	DUP-1	
Date Sampled:	⁽¹⁾	7/14/2017	7/14/2017	10/11/2017	4/27/2018	10/29/2018	7/11/2019	11/20/2019	5/15/2020	09/21/2020	9/21/2020	4/26/2021	9/22/2021	5/5/2022	8/30/2022	8/30/2022	
Duplicate of:			CSW-27-20170714								CSW-27						
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	1.78	1.27	1.54	0.590	0.608	1.64	0.764	1.12	1.25	1.27	
Arsenic	0.01	0.0017 J	0.003 U	0.004	0.0045	0.0046	0.0026	0.0042	0.0045	0.0010 J	0.0010 U	0.0050	0.0014 J	0.0026	0.0037	0.0037	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.00017 J	0.0004 U	0.002 U	0.00018 J	0.00054 J	0.0004 J	0.0004 J	0.0011 J	0.0020 U	0.0008 J	0.0020 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00026 J	0.0012 J	0.00075 J	0.00045 J	0.0004 U	0.0004 U	0.0034	0.0020 U	0.0016 J	0.0026 J	0.0028 U	
Calcium	NS	150 J	150 J	160 J	140	130	114	104	101	90.4	89.6	81.9	92.4	83.5	98.2	99.1	
Iron	0.3	330 J	360 J	380	320	290	247	230	219	186	181	124	200	147	155	156	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0005 J	0.0017 J	0.0011 J	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U	
Magnesium	NS	140 J	150 J	150	140	130	117	102	92.5	91.2	90.3	79.8	95.8	84.6	90.9	92.1	
Manganese	0.05	88 J	91 J	92 J	86	82 J	75.7	65.8	62.8	60.0	58.3	50.6	57.6	53.7	57	59.3	
Nickel ⁽²⁾	0.073	0.055 J	0.06 J	0.059	0.058 J	0.069	0.0862	0.0509	0.0824	0.0858	0.0859	0.239	0.107	0.146	0.215	0.214	
Potassium	NS	19	21	21	19 J	19 J	16.5	15.4	15.2	13.8	13.8	11.8	13.8	12.3	13.1	13.3	
Sodium	NS	260 J	290 J	300	280	250	240	221	184	183	177	132	221	153	170	168	
Zinc	5	0.033 J	0.037 J	0.036	0.064 J	0.11	0.212	0.079	0.233	0.142	0.142	0.306	0.282	0.242	0.491	0.507	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	1.9	2	2.2	2.06	2.01	1.42	2.06	1.38	2.00 U	2.00 U	
Chloride	250	490	500	450	420	380 J	325	336	320	304	305	214	327	202	268	268	
Fluoride	2	2 U	2 U	0.06 UJ	0.2 U	0.2 UJ	0.0577	0.37	0.18 J	0.200 U	0.200 U	0.260	0.200 U	0.157 J	2.00 U	2.00 U	
Sulfate	250	1700	1700	1400	1700	1600 J	1420	1530	1860	943	950	930	1170	1170	1090	1080	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.0032 J	NA	0.05 U	0.281	0.11 U	0.1 U	0.0600 U	0.0986 J	0.0300 U	0.0600 U	0.0300 U	0.00300 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	ND	NA	0.05 U	0.006 U	0.0099 J	0.005 U	0.0600 U	0.0600 U	0.0300 U	0.0600 U	0.0300 U	0.00300 U	0.00300 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.25 U	0.025 U	0.025 UJ	0.066	0.281	0.10 U	0.095 U	0.120 U	0.120 U	0.0600 U	0.120 U	0.0600 U	0.00600 U	0.00600 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	4.3 U	2.59 U	2.08 U	6.5	5.6	0.326 U	2.65 J	1.83 U	6.46	3.68 J	
Gross Beta ⁽⁴⁾	50	22.5 J	14.9 J	17.2	17.1	7.8 U	24.4	18.7	12.4	29.4	22.5	5.94	17.5	23.2	13.8	16.8	
Radium-226 ⁽⁵⁾	5	0.359 J	0.352 J	0.27 U	0.22	0.133 U	1.1	0.605	0.799 J	1.4	1.5	2.64	0.19 J	0.358	0.272	0.565	
Radium-228 ⁽⁵⁾	5	1.16	1.34	2.15	1.15	0.484 U	2.9	2.55	1.65 J	1.7	2.1	0.13 J	4.15	2.59	2.30	2.75	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	91	93	67	59	47	109	101	80.5	80.8	84.3	33.4	72.1	40.5	52.3	52.6	
Total Dissolved Solids	500	3500	3600	3300	2900	2600	2790	2130	2460	2100	2160	2010	2460	2030	2190	2140	
Total Suspended Solids	NS	82	140	100	46	51	34	31.2	28.5	18.0	18.0	16.0	8.00 J	4.00	14.0	13.0	
Field Parameters																	
pH (S.U.)	6.5-8.5	6.05	NA	5.64	5.35	5.47	NA	NA	4.85	5.26	NA	4.88	5.15	5.21	4.92	NA	
Specific Conductivity (mS/cm)	NS	3.67	NA	4	3.46	3.45	NA	NA	3.21	2.26	NA	2.11	2.76	2.84	2.63	NA	
Temperature (°C)	NS	23.62	NA	18.24	15.79	16.84	NA	NA	18.45	14.86	NA	14.91	16.19	15.33	15.65	NA	
Turbidity (NTU)	NS	18	NA	10.2	9.12	19	NA	NA	39.1	0.00	NA	4.40	2.4	0.0	0.0	NA	
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.00	0.94	0.00	NA	NA	0.00	0.00	NA	0.00	0.00	0.00	0.00	NA	
Oxidation-Reduction Potential (mV)	NS	10	NA	-30	-19	68	NA	NA	80	53	NA	117	118	132	95	NA	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-28												
Sample Number:	SMCL	CSW-28-20170714	CSW-28-20171011	CSW-28-20180427	CSW-28-20181026	CWS-28	CSW-28	CSW-28_051520	CWS-28	CSW-28	CSW-28	CSW-28	CSW-28	CSW-28
Date Sampled:	⁽¹⁾	7/14/2017	10/11/2017	4/27/2018	10/26/2018	7/16/2019	11/20/2019	5/15/2020	09/21/2020	4/26/2021	9/28/2021	5/5/2022	8/30/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	3.5	13	15	13	16.7	7.87	14.6	16.8	25.2	21.3	20.8	14.9	
Arsenic	0.01	0.0081	0.016	0.012	0.012	0.0019 J	0.0204	0.0154 J	0.0010 U	0.0067	0.0010 U	0.0012 J	0.0018 J	
Beryllium	0.004	0.0031	0.0094	0.0062	0.007	0.0046 J	0.0047	0.0064	0.0063	0.0050	0.0064 J	0.0039	0.0020 U	
Cadmium	0.005	0.0023	0.04 U	0.0004 U	0.0021	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	230 J	260 J	190	210	224	236	236	230	222	234	239	250	
Iron	0.3	470 J	540	390	400	398	418	376	406	385	392	425	386	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00087 J	0.00046 J	0.0004 U	0.0004 U	0.0020 U	0.0007 J	0.0020 U	
Magnesium	NS	220 J	270	200	230	234	222	216	227	223	216	234	226	
Manganese	0.05	150 J	200 J	150	150	192	173	166	183	172	167	181	184	
Nickel ⁽²⁾	0.073	0.55 J	0.84	0.69 J	0.69	0.755	0.632	0.717	0.783	0.630	0.744	0.438	0.143	
Potassium	NS	27	26	18 J	24	25.5	25.6	26.8	22.6	19.9	19.3	18.9	20.4	
Sodium	NS	360 J	420	330	380	443	427	411	461	442	429	457	450	
Zinc	5	0.96 J	1.5	1.2 J	1	1.32	0.692	1.78	1.09	1.38	1.15	0.0416	1.27	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	5 U	2.5	2.6	4.6 J	2.44	1.9	2.9	114	3.00	3.21	3.08	3.34	
Chloride	250	720	680	590	700 J	660	702	639	112	372 J	827	811 J	743	
Fluoride	2	0.88 J	0.51 J	1	1.2 J	0.306	1.1	0.79	114	0.753	1.19	0.797	2.00 U	
Sulfate	250	2900	2600	2800	2700 J	2410	3300	4650	113	1200 J	2920	2360	2330	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	0.0025 J	NA	0.1 U	0.144	0.11 U	0.1 U	25.3	0.0300 U	0.150 U	0.0300 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	NA	0.1 U	0.006 U	0.0096 J	0.005 U	3.67	0.0300 U	0.150 U	0.0300 U	0.00300 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 U	1.8 J	0.023 J	0.144	0.1 U	0.095 U	29.0	0.0600 U	0.300 U	0.0600 U	0.00600 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	14.4 U	7.93 U	22.2 U	3.09 U	13.7	5.17 U	13.4 U	20.1	-9.94 U	7.48 J	22.4	39.9	
Gross Beta ⁽⁴⁾	50	24.1	18.6	18.8	571	34	26.1	18.7	51.6	-3.31 U	15.7 J	42.3	50.1	
Radium-226 ⁽⁵⁾	5	0.798 J	0.814 J	1.4	2	4.4	0.635	1.06	4.0	4.86	1.80	2.28	2.42	
Radium-228 ⁽⁵⁾	5	1.53	2.36	3.57	4.19	4.6	3.73	4.74	4.0	1.56	5.34	4.09	3.68	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	28	9.1	5 U	10	5 U	36	21	12.8	5.00 U	13.1	5.00 U	14.5	
Total Dissolved Solids	500	5000	5500	5100	5400	5470	4750	4000	5460	5620	5570	5680	5350	
Total Suspended Solids	NS	130	200	36	66	11.6	78	50	42.0	42.0	44.0	177	25.0	
Field Parameters														
pH (S.U.)	6.5-8.5	6.08	5.59	4.98	5.2	NA	NA	5.10	4.9	4.61	4.83	5.28	4.68	
Specific Conductivity (mS/cm)	NS	4.8	5.6	5.33	5.76	NA	NA	5.70	5.43	5.74	6.16	7.70	5.58	
Temperature (°c)	NS	23.99	18.59	13.37	13.57	NA	NA	15.15	15.1	14.40	14.83	14.26	15.41	
Turbidity (NTU)	NS	59.6	75.6	8.83	44.5	NA	NA	22.1	40.4	46.1	30.1	16.4	1.2	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-62	-30	45	44	NA	NA	66	83	149	119	117	200	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
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	CSW-29	CSW-29	CSW-29_051320	CSW-29	CSW-29	CSW-29	DUP-1-CSW-29	CSW-29	CSW-29	
Date Sampled:	⁽¹⁾	6/27/2017	10/3/2017	10/3/2017	4/26/2018	4/26/2018	10/17/2018	7/10/2019	11/18/2019	5/13/2020	09/24/2020	4/28/2021	9/21/2021	9/21/2021	5/10/2022	8/31/2022	
Duplicate of:				CSW-29-20171003		CSW-29-20180426											
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.0192 J	0.0848	0.0446 J	0.112	0.0215 J	0.226	0.220	0.0218 J	0.088	
Arsenic	0.01	0.0038	0.0034	0.0035	0.0079	0.0081	0.0081	0.0111	0.0107	0.0092	0.0090	0.0112	0.0100	0.0096	0.0101	0.0115	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 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	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	53 J	54	54	55	56	59	68.3	61.7	76.1	73.2	68.7	63.6	63.6	66.0	69.7	
Iron	0.3	47 J	51	54	61	62	68	91.4	80.8	88.7	92.0	92.9	84.0	84.1	89.1	91.9	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00067 J	0.00022 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	34 J	35	33	36	37	41	52.2	46.2	48.9	56.2	55.4	50.3	50.7	53.7	56.4	
Manganese	0.05	31 J	33	33	33	32	37	45.3	33.4	32.5	46.3	40.1	35.7	35.7	38.8	38.7	
Nickel ⁽²⁾	0.073	0.018	0.016	0.016	0.02	0.021	0.022	0.0244	0.0185	0.0166	0.0193	0.0164	0.0181	0.0178	0.0131	0.0172	
Potassium	NS	11	10	9.8	11	11	11	12.5	11.5	12.6	13.3	11.8	10.9	10.8	11.5	12.4	
Sodium	NS	25 J	28	28	31	32	37	64.6	55.4	55.9	66.3	64.9	63.8	63.2	65.7	74.6	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0156	0.10 U	0.017 J	0.0144	0.0124 J	0.0959 J	0.0205 J	0.0089	0.0149	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.31	0.42 J	0.62	0.599 J	0.684	0.630	0.688	0.676	2.00 U	
Chloride	250	13	15	15	16	17	21	19.1	32.2	28.9	27.7	37.5	35.0	35.9	30.0	47.4	
Fluoride	2	0.049 J	0.059 J	0.058 J	0.081 J	0.32 J	1 U	0.01	0.23	0.34	0.200 U	0.100 U	0.200 U	0.200 U	0.200 U	2.00 U	
Sulfate	250	220	250	250	250	250	300	363	359	357	421	489	446	454	428	597	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0016 J	0.0019 J	NA	NA	0.05 UJ	0.0747	0.12	0.39	0.0600 U	0.0300 U	0.0600 U	0.0600 U	0.0600 U	0.0662 J	
Nitrogen, Nitrite	1	ND	ND	ND	NA	NA	0.12	0.003 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.092	0.0747	0.12	0.39	0.120 U	0.0600 U	0.120 U	0.120 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	-0.0549 U	-1.3 U	1.4 U	0.536 U	2.82 U	0.154 U	8.4	0.474 U	2.31 U	2.1 U	-0.772 U	0.262 U	2.21 J	3.58 J	-0.336 U	
Gross Beta ⁽⁴⁾	50	8.65	8.99	6.9	10.2	9.14	5.62	9.3	14.4	18.5	17.1	11	12.3	13.8	12.7	10.9	
Radium-226 ⁽⁵⁾	5	0.309 J	0.259 J	0.173 J	0.223 U	0.279 U	0.42 U	0.8	0.425 U	0.298 U	0.5 U	0.00434 U	0.401	0.812	0.428	0.557	
Radium-228 ⁽⁵⁾	5	0.405 J	0.249 U	0.617 J	0.235 U	0.43 J	0.361 U	0.7 U	0.294 U	1.12 U	0.8 U	0.627	0.731	3.28 J	1.16	1.35	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	160	130	150	150	150	210	207	140	203	133	176	151	150	204	152	
Total Dissolved Solids	500	530	610	600	560	450	670	896	690	695	800	955	969	946	997	1010	
Total Suspended Solids	NS	26	59	58	67	80	43	104	50.8	41	72.0	115	27.0	58.0	79.0	61.0	
Field Parameters																	
pH (S.U.)	6.5-8.5	6.45	6.32	NA	6.52	NA	6.23	NA	NA	6.18	6.39	6.09	6.14	NA	6.59	6.15	
Specific Conductivity (mS/cm)	NS	0.751	0.948	NA	0.988	NA	1.15	NA	NA	0.984	0.77	1.260	1.170	NA	1.39	1.37	
Temperature (°C)	NS	16.24	17.87	NA	16.63	NA	17.33	NA	NA	21.90	14.99	17.17	15.02	NA	20.39	16.07	
Turbidity (NTU)	NS	5.26	4.13	NA	6.64	NA	5.17	NA	NA	18.1	3.4	1.4	0.3	NA	0.0	3.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.62	NA	2.53	NA	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-32	-63	NA	-144	NA	-53	NA	NA	-88	-95	-17	-55	NA	-78	51	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-31													
Sample Number:	SMCL	CSW-31-20170707	CSW-31-20171010	CSW-31-20180501	CSW-31-20181016	DUP-01-20181016	CSW-31	CSW-31	CSW-31_052020	CSW-31	CSW-31	CSW-31	CSW-31	CSW-31	
Date Sampled:	⁽¹⁾	7/7/2017	10/10/2017	5/1/2018	10/16/2018	10/16/2018	7/11/2019	11/25/2019	5/20/2020	09/21/2020	4/21/2021	9/28/2021	5/10/2022	9/7/2022	
Duplicate of:						CSW-31-20181016									
Total Inorganics		mg/L	mg/L	mg/L	mg/L	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	0.0921	0.050 U	0.0808	0.0421	0.0102 J	0.0567 J	0.0447	0.0766	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.0020 U	0.0003 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0005	0.00056	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.000091 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	21	26	110	53	55	28.1	32.7	29	16.4	12.9	19.0	13.9	12.3	
Iron	0.3	27	22	1.8	2.2	2.3	38.4	5.19	20.6	23.0	19.2	23.2	22.7	20.4	
Lead	0.015	0.0025 U	0.0011 J	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.002 U	0.0004 U	0.0005 J	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	3.2	2.6	0.46	0.33	0.33	4.32	1.3	1.82	2.15	1.91	1.79	1.90	1.99	
Manganese	0.05	0.36 U	0.24	0.038	0.03	0.029	0.394	0.0777	0.253	0.209	0.156	0.192	0.177	0.151	
Nickel ⁽²⁾	0.073	0.005 U	0.0026 J	0.015	0.0082	0.0086	0.0056 J	0.0036 J	0.0036 U	0.0015 J	0.0019 J	0.0024 J	0.00082 J	0.0020 U	
Potassium	NS	19	23	15	6.7	6.8	3.17	3.81	2.76	2.09	1.90	1.66	1.82	1.89	
Sodium	NS	15	15	30	19	19	8.99	13.5	9.96	6.44	5.31	5.22	5.50	5.39	
Zinc	5	0.29	0.57	0.072	0.016 J	0.017 J	0.0378	0.0091 J	0.0402 U	0.0375	0.0077	0.0162	0.0069	0.0020 U	
Anions		mg/L	mg/L	mg/L	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	0.1 U	0.66	0.49 U	0.49 U	0.082	0.20 J	0.2 J	0.200 U	0.100 U	0.500 U	0.200 U	2.00 U	
Chloride	250	5.4	6.5	44	44	44	14.5	31.6	18.2	7.93	1.00 U	5.53 J	4.13 J	6.02	
Fluoride	2	0.14	0.067 J	0.12 J	0.059 J	0.057 J	0.0279	0.11 J	0.086 J	0.200 U	0.100 U	0.500 U	0.200 U	2.00 U	
Sulfate	250	2.2	2.3	6.3 J	2.2	2.1	2.74	2.6	2.1	3.67 J	3.57	5.00 U	3.17 J	3.98	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.05 U	0.0499	0.11 U	0.11 U	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.092	0.11	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.011 J	0.025 U	0.025 U	0.025 U	0.025 U	0.0499	0.15	0.095 U	0.120 U	0.0600 U	0.300 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	1.6 J	6.98	0.47 U	2.35 J	0.0253 U	3.6	1.77 U	0.869 U	1.9	1.25 J	1.89	2.10	1.70	
Gross Beta ⁽⁴⁾	50	16.1	20.7	10.3	4.63	5.71	8.4	5.6	5.47	4.3	1.11 J	3.20	5.96	2.88	
Radium-226 ⁽⁵⁾	5	0.97 J	1.67	0.391 J	0.358 U	0.645 U	2	0.538	0.998 J	1.0	0.731	0.347 J	0.533	0.410	
Radium-228 ⁽⁵⁾	5	0.893 J	0.9 J	0.452 J	0.451 U	0.523 J	1.3	1.26 U	1.99 J	1.0 U	0.758	2.28 J	0.679	0.859	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	99	110	240	110	100	80.9	70	64.5	57.0	60.8	66.4	60.4	44.4	
Total Dissolved Solids	500	110	140	4000	150	150	132	150	105	98.0	120	120	93.3	94.0	
Total Suspended Solids	NS	66	80	21	15	17	80	12.4	35	46.0	20.0	26.0	28.7	12.0	
Field Parameters															
pH (S.U.)	6.5-8.5	8.74	8.02	12.51	11.6	NA	NA	NA	6.94	6.57	6.35	6.61	6.64	6.01	
Specific Conductivity (mS/cm)	NS	0.255	0.264	1.63	0.687	NA	NA	NA	0.241	0.132	0.162	0.201	0.204	0.157	
Temperature (°c)	NS	19.13	17.95	16.55	15.28	NA	NA	NA	13.41	14.3	14.23	13.82	13.53	14.65	
Turbidity (NTU)	NS	105	165	6.81	4.29	NA	NA	NA	40	11.8	3	5.2	1.6	1.3	
Dissolved Oxygen (mg/L)	NS	0.00	0.36	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-242	-373	-317	-298	NA	NA	NA	-146	-85	-6	-118	-98	-5	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-32												
Sample Number:	SMCL	CSW-32-20170629	CSW-32-20171005	CSW-32-20180503	CSW-32-20181023	CSW-32	CSW-32	CSW-32_052120	CSW-32	CSW-32	CSW-32	CSW-32	CSW-32	CSW-32
Date Sampled:	⁽¹⁾	6/29/2017	10/5/2017	5/3/2018	10/23/2018	7/9/2019	11/26/2019	5/21/2020	09/17/2020	4/22/2021	9/22/2021	5/3/2022	9/8/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.05 U	0.024 J	0.05 U	0.023 J	0.0075 J	0.25 U	0.13 U	0.0167 J	0.0240 J	0.0400 U	0.0080 U	0.0080 U	0.0080 U
Arsenic	0.01	0.0021 J	0.0019 J	0.0065 J	0.0018 J	0.0979	0.0119	0.0158	0.0122	0.0022	0.001 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0050 U	0.0025 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.015 U	0.01 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Calcium	NS	150 J	130	150	140	137	126	145	150	145	156	161	157	
Iron	0.3	470 J	560	670	520	487	315	520	596	573	581	604	596	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00093 J	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Magnesium	NS	77 J	71	80	72	82.6	67.7	89.5	84.7	80.7	82.6	86.8	85.0	
Manganese	0.05	15 J	10	9	12	18.3	24.6	14.3	11.1	11.1	10.5	8.03	7.36	
Nickel ⁽²⁾	0.073	0.045	0.022	0.0072	0.026	0.0694	0.102	0.0532	0.0225	0.0327	0.0223	0.0045	0.0080 J	
Potassium	NS	8.6 J	6	NS	6	7.69	8.59	6.73	6.25	5.81	5.79	5.61	5.59	
Sodium	NS	130 J	130	160	120	147	105	135	159	144	152	162	150	
Zinc	5	0.023	0.02 U	0.02 U	0.027 U	0.0792	0.101	0.0415 U	0.0183	0.0263	0.0779 J	0.0049	0.0086 J	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.96	1	2.1 J	5 U	0.936	0.31 J	0.82	1.23	1.20	1.10	0.968	2.00 U	
Chloride	250	230	270	280	250	252	227	212	287	290	252	230	272	
Fluoride	2	2.6 J	0.06 U	0.5 U	1 U	0.02	0.062 J	0.073 J	0.200 U	0.100 U	0.200 U	0.100 U	2.00 U	
Sulfate	250	1800	1600	2400	2100	1870	1680	1760	1410	2110	2090	2030 J	2120	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.103	0.31	0.1 U	0.0600 U	0.0495 J	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.00614 J	0.010 U	0.0032 J	0.0600 U	0.0300 U	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.13 U	0.025 U	0.025 UJ	0.091 UJ	0.109	0.31	0.091 J	0.120 U	0.0600 U	0.120 U	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	5.75 U	0.96 U	-7.08 U	9.11 U	21.3	-1.75 U	-4.28 U	4.5 U	-1.25 U	-0.736 U	1.56 U	9.94	
Gross Beta ⁽⁴⁾	50	5.85 U	4.47 U	8.41 U	7.58 U	9.3	3.8 U	8.34	12.2	-5.65 U	0.753 U	5.42 J	17.9	
Radium-226 ⁽⁵⁾	5	0.22 J	0.235 J	0.326 J	0.47 U	0.4	0.513	0.466 J	0.6	0.499	0.404	0.492	0.462	
Radium-228 ⁽⁵⁾	5	0.645 J	0.286 U	1.02	0.431 U	1.0	0.306 U	0.641 U	0.9 U	-0.728 U	0.931	1.09	0.254 J	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	36	66.1	24.9	5.00 U	5.53 J	20.5	
Total Dissolved Solids	500	2500	3100	2900	3100	2830	2940	2320	3260 J	3160	3280	3480	3090	
Total Suspended Solids	NS	180	130	160	88	240	52	64.4	263	91.0	140	76	126	
Field Parameters														
pH (S.U.)	6.5-8.5	6.16	5.89	5.72	5.79	NA	NA	5.61	5.76	6.14	5.77	6.10	5.77	
Specific Conductivity (mS/cm)	NS	2.67	3.48	3.14	3.1	NA	NA	2.97	3	3.16	3.31	4.65	3.39	
Temperature (°C)	NS	17.2	16.81	16.01	17.7	NA	NA	15.58	14.38	13.74	13.66	13.66	14.31	
Turbidity (NTU)	NS	19	12.2	14.9	30	NA	NA	35.1	35.2	388.0	130	30.8	19.7	
Dissolved Oxygen (mg/L)	NS	0.00	0.40	0.52	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-51	-76	-144	-12	NA	NA	-22	-53	-47	8	-57	10	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
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	CSW-33	CSW-33	CSW-33_052120	DUP_052120	CSW-33	CSW-33	CSW-33	CSW-33	CSW-33	CSW-33
Date Sampled:	⁽¹⁾	6/29/2017	6/29/2017	10/5/2017	5/3/2018	10/23/2018	10/23/2018	7/9/2019	11/26/2019	5/21/2020	5/21/2020	09/17/2020	4/22/2021	9/28/2021	5/3/2022	9/8/2022	
Duplicate of:			CSW-33-20170629				CSW-33-20181023				CSW-33						
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	1.06	0.115	0.0539	0.0512	0.0459	0.151	0.0466 J	0.0706	0.017 J	
Arsenic	0.01	0.0016 J	0.0023 J	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.0020 U	0.00034 J	0.00026 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.005 U	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 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	0.0030 U	0.002 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Calcium	NS	270 J	150 J	250	180	110	110	41.6	37.3	39.4	35.8	31.6	23.5	30.9	26.2	23.1	
Iron	0.3	0.52 J	480 J	0.2	2.2	1.8	1.9	3.45	2.26	2.37	1.94	4.44	4.99	3.93	6.17	6.08	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0005 J	0.0020 U	0.001 U	0.00019 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	0.0020 U
Magnesium	NS	0.34 J	83 J	0.23 J	3.6	3.3	2.9	2.98	1.93	2.08	1.92	2.42	2.44	2.16	2.95	2.86	
Manganese	0.05	0.011 J	16 J	0.0041 J	0.57	0.48	0.39	0.205	0.0721	0.122	0.0966 J	0.106	0.0873	0.103	0.121	0.0881	
Nickel ⁽²⁾	0.073	0.013 J	0.05 J	0.012	0.0074	0.005	0.0048 J	0.0025 J	0.0059	0.0016 U	0.0017 U	0.0015 J	0.0146	0.0024 J	0.0014 J	0.0020 U	0.0020 U
Potassium	NS	42 J	9.2 J	22	21	14	14	5.69	6.09	6.75	7.92 J	4.25	3.28	4.08	3.22	3.24	
Sodium	NS	44 J	140 J	36	30	22	20	12	14	14.2	15.2	11.1	8.82	10.8	9.48	8.99	
Zinc	5	0.058 J	0.025 J	0.017 J	0.017 J	0.017 U	0.01 U	0.007 J	0.020 U	0.015 U	0.015 U	0.0057	0.0079	0.0133	0.0064	0.0020 U	0.0020 U
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	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	0.0461 J	0.50 U	0.17 J	0.18 J	0.200 U	0.100 U	0.500 U	0.100 U	2.00 U	2.00 U
Chloride	250	29 J	230 J	44	24	21	20	7.11	9.6	9.3	10.3	6.75	5.52	7.13 J	4.32	9.22	
Fluoride	2	0.17 J	5 U	0.14	0.12	0.089 J	0.095 J	0.0468	0.093 J	0.091 J	0.092 J	0.200 U	0.100 U	0.500 U	0.100 U	2.00 U	2.00 U
Sulfate	250	5.7 J	1900 J	5.3	9.1	21	20	15	22.2	19.1	20.9	17.3	14.5	15.6	9.94	18.2	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.0020 J	0.05 U	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.468	
Nitrogen, Nitrite	1	ND	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.010 U	0.0067 J	0.0087 J	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.0600 U	0.0600 U
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.13 U	0.029 J	0.025 UJ	0.025 UJ	0.025 UJ	0.012 U	0.10 U	0.095 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.0600 U	0.468	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	2.4	0.0259 U	2.36 U	0.386 U	2.0	1.22 U	2.09	3.44	1.43	
Gross Beta ⁽⁴⁾	50	28.5 J	8.68 U	18.2	49.3	10	7.93	8.1	6.72	9.96	4.73 J	6.9	4.28	5.90	6.56	5.14	
Radium-226 ⁽⁵⁾	5	0.518 J	0.278 J	0.411 J	0.484 J	0.752 U	0.695 U	0.5	0.9	0.315 J	0.684 J	1.0	0.899	0.820	0.787	1.01	
Radium-228 ⁽⁵⁾	5	0.279 U	0.662 J	0.107 U	0.331 U	0.301 U	0.235 U	1.2	1.3 U	0.447 U	0.122 U	0.8 U	0.369 J	1.39	0.770	0.699	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	710 J	5 U	620	380	220	220	96.8	55	70.5 J	51.5 J	95.4	79.0	93.1	85.6	70.5	
Total Dissolved Solids	500	830 J	2600 J	820	470	300	300	147	126	100	74	160 J	109	154	128	110	
Total Suspended Solids	NS	8.9	200	7.1	62	83	98	38.6	55.5	45.4 J	66.8 J	4.00 J	11.0	11.5	14.00	2.00 U	
Field Parameters																	
pH (S.U.)	6.5-8.5	13.89	NA	12.85	12.29	12.12	NA	NA	NA	10.90	NA	7.47	6.65	7.78	6.76	6.09	
Specific Conductivity (mS/cm)	NS	3.41	NA	3.1	2.27	1.53	NA	NA	NA	0.270	NA	0.161	0.181	0.218	0.216	0.186	
Temperature (°C)	NS	16.33	NA	17.47	15.91	13.51	NA	NA	NA	14.63	NA	14.27	14.01	14.42	14.10	14.47	
Turbidity (NTU)	NS	5.8	NA	6.85	8.44	19	NA	NA	NA	28.0	NA	3.2	6.6	8.1	3.2	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.00	0.00	0.00	NA	NA	NA	0.00	NA	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-194	NA	-352	-266	-217	NA	NA	NA	-154	NA	-220	-63	-266	-54	21	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-34												
Sample Number:	SMCL	CSW-34-20170714	CSW-34-20171011	CSW-34-20180427	CSW-34-20181025	CSW-34	CSW-34	CSW-34_051520	CSW-34	CSW-34	CSW-34	CSW-34	CSW-34	
Date Sampled:	⁽¹⁾	7/14/2017	10/11/2017	4/27/2018	10/25/2018	7/16/2019	11/20/2019	5/15/2020	09/21/2020	4/26/2021	9/28/2021	5/5/2022	8/30/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	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	0.337	0.5	0.446	0.269	0.561	0.184	0.575	0.284	
Arsenic	0.01	0.0016 J	0.0024 J	0.0016 J	0.003 U	0.001 U	0.0011 J	0.00097 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	200 J	320 J	350	310	255	215	265	316	42.5	242	39.2	35.7	
Iron	0.3	1.6 J	0.29	0.2	0.35	0.182	0.403	0.416	0.140	2.21	0.138	3.09	3.12	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0016 J	0.00075 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	0.77 J	0.097 J	0.09 J	0.18 J	0.0674	0.186 J	0.186 J	0.102	0.508	0.0971	0.568	0.717	
Manganese	0.05	0.038 J	0.0052 J	0.0021 U	0.0076	0.0104	0.0135	0.0186	0.0196 J	0.0678	0.0103 J	0.0706	0.0817	
Nickel ⁽²⁾	0.073	0.012 J	0.019	0.02 J	0.019	0.0312	0.0175	0.017	0.0303	0.0040	0.0205	0.0032	0.0028 J	
Potassium	NS	200	130	120 J	87	68.9	40	45.6	43.8	14.7	25.9	8.74	6.77	
Sodium	NS	100 J	100	100	85	80.8	54.5	69.6	73.4	21.1	52.5	18.4	15.8	
Zinc	5	0.02 UJ	0.02 U	0.02 UJ	0.013 J	0.0102	0.020 U	0.0049 J	0.0172	0.0023	0.0254	0.0055	0.0020 U	
Anions		mg/L	mg/L	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	0.53	1	0.79 J	1.12	1.1	1.6	1.74	0.233 J	1.64	0.148 J	2.00 U	
Chloride	250	9.6	21	39	56 J	98.5	79.9	93.4	160	20.0	167	14.1	19.0	
Fluoride	2	0.1	0.11 J	0.1 U	0.1 UJ	0.784	1.1	0.09 J	0.200 U	0.121	0.500 U	0.100 U	2.00 U	
Sulfate	250	16	19	28	26 J	34.7	2.0 U	28.5	45.8	13.4	45.5	11.5	16.5	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0070	NA	0.05	0.0118 J	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	NA	0.15	0.0968	0.019	0.0044 J	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.00300 U	
Nitrogen, Nitrate-Nitrite	10	0.039 J	0.038 J	0.096 J	0.12 U	0.109	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.0600 U	0.00600 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	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	3.1 U	3.97	1.65 U	2.6 U	-0.0798 U	1.81 J	3.77	0.892 J	
Gross Beta ⁽⁴⁾	50	163	83.1	95.4	71.5	69.4	35.4	28.1	52.7	11.2	20.9	8.99	5.52	
Radium-226 ⁽⁵⁾	5	0.923 J	1.04	1.07	0.0567 U	1.8	1.37	1.18	1.1	-0.43 U	0.693	0.283	0.370	
Radium-228 ⁽⁵⁾	5	0.942 J	1.37	0.776 J	1.31	1.1	1.21 U	2.53 U	1.3	0.182	1.96	0.278 J	0.357	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	950	880	990	990	813	582	520	750	31.6	75.6	93.5	91.3	
Total Dissolved Solids	500	1200	1500	1500	1200	1120	660	754	1090	5580	1050	177	159	
Total Suspended Solids	NS	60	13	5.7	7.3	28	14.3	9.4	3.00 J	87.0	0.400 J	11.0	25.0	
Field Parameters														
pH (S.U.)	6.5-8.5	12.31	12.37	13.21	12.66	NA	NA	12.95	12.61	11.00	12.5	9.60	9.36	
Specific Conductivity (mS/cm)	NS	4.2	5.56	6.27	5.05	NA	NA	4.300	3.62	0.348	3.03	0.292	0.251	
Temperature (°c)	NS	20.71	15.59	14.78	14.37	NA	NA	14.72	15.11	14.94	14.8	14.45	15.98	
Turbidity (NTU)	NS	19.4	11	5.24	10.9	NA	NA	14	0.00	14	0.00	8.7	5.1	
Dissolved Oxygen (mg/L)	NS	0.18	1.29	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-209	-433	-425	-258	NA	NA	-216	-408	-254	-420	-516	-283	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-35													
Sample Number:	SMCL	CSW-35-20170713	CSW-35-20171013	CSW-35-20180426	CSW-35-20181026	CSW-35	CSW-35	CSW-35_051420	DUP_051420	CSW-35	CSW-35	CSW-35	CSW-35	CSW-35	
Date Sampled:	⁽¹⁾	7/13/2017	10/13/2017	4/26/2018	10/26/2018	7/16/2019	11/19/2019	5/14/2020	5/14/2020	09/24/2020	4/26/2021	9/29/2021	5/2/2022	9/7/2022	
Duplicate of:									CSW-35						
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.22	0.93	0.13	0.16	0.0292	0.436 J	0.182	0.195	0.103	0.0951	0.570 J	0.200	0.311	
Arsenic	0.01	0.003 U	0.0024 J	0.0021 J	0.003 U	0.001 U	0.020 U	0.00073 J	0.00072 J	0.0010 U	0.0010 J	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.010 U	0.001 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.030 U	0.002 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	150 J	190 J	390	390	417	306	371	393	379	384	258	339	300	
Iron	0.3	2	0.41 J	0.21	0.19	0.0749	0.217 J	0.0896	0.0846	0.0400 U	0.0295 J	0.142 J	0.0800	0.0322 J	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0071	0.008	0.0054	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	0.6	0.046 J	0.031 J	0.032 J	0.0321	5.0 U	0.25 U	0.25 U	0.0626 U	0.0918	0.163	0.0896	0.0822	
Manganese	0.05	0.061 J	0.0046 J	0.005 U	0.0024 U	0.002 U	0.0113	0.0014 J	0.0011 U	0.0080 U	0.0109 J	0.0304	0.0246 J	0.0022 J	
Nickel ⁽²⁾	0.073	0.0052	0.011	0.019	0.024	0.0417	0.0255	0.0152	0.0141	0.0324	0.0289	0.0182 J	0.0204	0.0242	
Potassium	NS	450	340	330	210	161	95.6	92.9	89.1	79.2	61.8	37.2	36.7	32.5	
Sodium	NS	200 J	160 J	210	160	153	96.6	101	106	94.9	87.3	64.1	74.5	66.0	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.0054 J	0.20 U	0.0056 J	0.015 U	0.0215	0.0016 J	0.0293 J	0.0250	0.0020 U	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.31 J	0.25	0.57	5 UJ	0.769	0.56	1	1	0.932	1.05	1.04 J	1.14	2.00 U	
Chloride	250	11	9.9	23	35 J	60.4	56.9	72.2	72	89.0	116	101	161	162	
Fluoride	2	0.1 U	0.18	0.1 U	1 UJ	2.2	1.7	0.14 J	0.15 J	0.528	0.159	0.515	0.107 J	2.00 U	
Sulfate	250	39 J	31	64	47 J	64.5	2.0 U	41.5	43.7	40.2	31.0	29.3	23.3 J	31.8	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	0.0086 J	0.0070	NA	0.05 U	0.0167 J	0.11 U	0.29	0.1 U	0.0600 U	0.0300 U	0.150 UJ	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	0.01 J	0.0033 J	NA	0.05 U	0.006 U	0.013	0.0049 J	0.0038 J	0.0600 U	0.0300 U	0.150 UJ	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.03 J	0.036 J	0.041 J	0.023 J	0.0167 J	0.10 U	0.29 J	0.095 U	0.120 U	0.0600 U	0.300 UJ	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	15.3	3.91 U	7.92 U	15 U	15.2	4.8 U	1.43 U	18.1	5.3 U	1.06 U	3.40 J	1.29 J	2.42	
Gross Beta ⁽⁴⁾	50	354	260	252	136	188	77.3	82.1 J	26.2 J	123	37.7	31.4	28.7	24.0	
Radium-226 ⁽⁵⁾	5	1.87	1.57	1.73	1.17	1.9	1.01	1.78	0.846 J	1.7 U	0.897	0.789	1.47	1.23	
Radium-228 ⁽⁵⁾	5	1.56 U	2.21	1.1	1.19	1	0.834 U	0.821 UJ	10.3 J	1.2	1.15	1.62	1.50	2.51	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	1300	1100	1600	1500 J	1510	970	1160	1050	1100	1050	909	849	672	
Total Dissolved Solids	500	2100	1800	1700	1800	1910	1210	1310	1260	1390	1450	979	1190	1110	
Total Suspended Solids	NS	16	24	3.1	7.9	0.8 U	3.8 J	4.6	4.7	7.00 J	2.00 J	27.0	0.800 U	5.00 J	
Field Parameters															
pH (S.U.)	6.5-8.5	12.45	12.5	12.56	12.76	NA	NA	13.15	NA	12.82	13.1	12.61	13.05	12.72	
Specific Conductivity (mS/cm)	NS	6.52	5.83	7.12	6.83	NA	NA	6.08	NA	5.07	5.47	3.58	5.17	3.81	
Temperature (°c)	NS	21.17	15.19	15	14.47	NA	NA	16.21	NA	16.13	17.66	14.44	16.1	16.52	
Turbidity (NTU)	NS	7.38	13.3	0.11	5.16	NA	NA	5.5	NA	3	3.3	9.4	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.48	1.05	0.56	0.00	NA	NA	0.00	NA	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-231	-582	-306	-301	NA	NA	-243	NA	-365	-426	-307	-249	-209	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-36													
Sample Number:	SMCL	CSW-36-20170717	CSW-36-20171004	CSW-36-20180503	CSW-36-20181025	CSW-36	CSW-36	CSW-36_052220	CSW-36	CSW-36	CSW-36	CSW-36	CSW-36	CSW-36	
Date Sampled:	⁽¹⁾	7/17/2017	10/4/2017	5/3/2018	10/25/2018	7/15/2019	11/20/2019	5/22/2020	9/24/2020	4/22/2021	10/5/2021	5/3/2022	9/1/2022		
Duplicate of:															
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	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	0.0764	0.0854	0.0814 J	0.0226 J	0.0487	0.105 J	0.0688	0.0457		
Arsenic	0.01	0.0075	0.0017 J	0.0018 J	0.0003 U	0.0014 J	0.002	0.005 U	0.0010 U	0.0018 J	0.0010 U	0.0013 J	0.0010 U		
Beryllium	0.004	0.00066	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U		
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.01 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U		
Calcium	NS	93	370 J	480	520	191	139	165	219	262	235	230	203		
Iron	0.3	5.4	0.12 J	0.084 U	0.088 J	84.9	44.4	4.29	0.710	1.01	0.866	0.557	0.332		
Lead	0.015	0.0049	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00029 J	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U		
Magnesium	NS	2.4	0.12 J	0.058 U	0.11 J	52.7	25	6.65	0.838	0.898	0.450	0.425	0.295		
Manganese	0.05	0.076	0.0095 UJ	0.0043 U	0.0095	2.98	1.4	0.15	0.0400 U	0.0262 J	0.0221	0.0346 J	0.0161		
Nickel ⁽²⁾	0.073	0.0094	0.013 J	0.019	0.021	0.0078 J	0.0020 J	0.015 U	0.0179	0.0124	0.0153	0.0204	0.0191		
Potassium	NS	84	130	70	46	21.5	17.1	19.8	16.4	13.7	12.6	12.3	10.6		
Sodium	NS	82	100 J	70	57	101	56.4	52.9	40.6	32.0	30.4	30.2	24.2		
Zinc	5	0.012 J	0.02 U	0.02 U	0.02 U	0.0039 J	0.020 U	0.075 U	0.0083	0.0096	0.0144	0.0116	0.0020 U		
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	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	0.738	0.71	0.96	0.959	1.02	1.13 J	0.894	2.00 U		
Chloride	250	12	12	38	68 J	75.5	60.9	70.2	81.9	98.0	76.0	72.5	49.4		
Fluoride	2	0.42	0.18 J	0.12	0.1 UJ	0.0557	0.14 J	0.073 J	0.200 U	0.183	0.500 U	0.100 U	2.00 U		
Sulfate	250	12	11	7.4	9 J	385	228	135	100	77.4	65.6	47.7	44.5		
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0029 J	0.035 J	0.05 U	0.0563	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.0600 U		
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.006 U	0.0067 J	0.0035 J	0.120 U	0.0300 U	0.150 U	0.0300 U	0.0600 U		
Nitrogen, Nitrate-Nitrite	10	0.032 U	0.013 U	0.084 J	0.014 U	0.0563	0.10 U	0.095 U	0.0600 U	0.0600 U	0.300 U	0.0600 U	0.120 U		
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	2.5 U	0.302 U	1.7 U	2.2 U	2.63 U	1.38 J	1.26 J	1.24 J		
Gross Beta ⁽⁴⁾	50	70.3	111	44	31.6	28.4	17.3	14.5	25.2	9.56	9.16	12.1	11.0		
Radium-226 ⁽⁵⁾	5	0.779 J	1.7	1.59	1.55	0.6	1.22	0.618 J	0.6 U	0.971	0.556 J	0.812	0.660		
Radium-228 ⁽⁵⁾	5	1.07 U	1.12	1.14	1.46	0.8 U	0.949 U	0.818 U	1.0 U	0.619	0.429 J	0.847	1.89		
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	360	1200	1300	1300	419	324	160	419	563	556	482	268		
Total Dissolved Solids	500	500	1600	1600	1500	1320	745	358	777	872	806	841	402		
Total Suspended Solids	NS	250	3.2	5	2.1	104	96.4	265	17.0 J	20.0	6.32	20.8	68.0		
Field Parameters															
pH (S.U.)	6.5-8.5	11.98	12.29	12.05	12.6	NA	NA	8.62	12.44	13.19	NA	12.93	12.33		
Specific Conductivity (mS/cm)	NS	1.65	5.07	6.07	5.75	NA	NA	1.090	1.95	2.960	NA	3.32	2.20		
Temperature (°c)	NS	22.16	18.67	21.33	16.25	NA	NA	14.87	15.4	13.49	NA	13.67	16.00		
Turbidity (NTU)	NS	183	3.24	2.75	1.88	NA	NA	37	7.6	16	NA	7.5	1.0		
Dissolved Oxygen (mg/L)	NS	0.00	1.23	0.75	0.00	NA	NA	0.00	0.00	0.00	NA	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	-359	-580	-313	-293	NA	NA	-360	-342	-378	NA	-257	-172		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-37													
Sample Number:	SMCL	CSW-37-20170629	CSW-37-20171006	CSW-37-20180425	CSW-37-20181015	CSW-37	CSW-37	DUP-112519	CSW-37_051820	CSW-37	CSW-37	CSW-37	CSW-37	CSW-37	
Date Sampled:	⁽¹⁾	6/29/2017	10/6/2017	4/25/2018	10/15/2018	7/11/2019	11/25/2019	11/25/2019	5/18/2020	9/23/2020	4/21/2021	10/5/2021	5/4/2022	8/30/2022	
Duplicate of:								CSW-37							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.065 J	0.036 J	0.05 U	0.05 U	0.0382	0.050 U	0.050 U	0.025 U	0.0080 U	0.0140 J	0.0510 J	0.0117 J	0.0138 J	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.0020 U	0.0020 U	0.001 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0010 U	0.000068 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	28 J	17 J	13	12	11.1	10.7	10.8	10.8	10.3	9.20	9.79	9.61	9.82	
Iron	0.3	22 J	25 J	24	25	25.2	24.8	24.1	25	24.9	21.9	22.6	23.5	20.9	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.0020 U	0.00036 J	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	3 J	2.6 J	2.6	2.5	2.55	2.38	2.22	2.4	2.43	2.17	2.20	2.25	2.28	
Manganese	0.05	0.34 J	0.23 J	0.19	0.19	0.187	0.175	0.172	0.208	0.198	0.161	0.165	0.175	0.160	
Nickel ⁽²⁾	0.073	0.005 U	0.005 U	0.005 U	0.005 U	0.002 U	0.0019 J	0.0018 J	0.003 U	0.0006 J	0.0248	0.0020 U	0.0004 J	0.0020 U	
Potassium	NS	2.8 J	2.5 J	2.3	2.3	2.35	2.2	2.06	2.27	2.27	2.12	2.05	2.10	2.05	
Sodium	NS	18 J	18 J	19	19	19.9	19	19.3	18.7	20.0	16.8	16.6	18.5	17.5	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.0025 J	0.0091 J	0.0087 J	0.015 U	0.0063	0.0039	0.0091 J	0.0036	0.0020 U	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.26 J	0.18 J	0.32 J	5 UJ	0.195	0.18 J	0.21 J	0.17 J	0.207 J	0.210 J	0.500 U	0.186 J	2.00 U	
Chloride	250	23	30	31	28	30.7	28.2	28.2	32.4	24.8	1.00 U	23.6	24.2	27.7	
Fluoride	2	0.12	0.063 J	0.083 J	1 U	0.0578	0.093 J	0.10 J	0.11 J	0.200 U	0.100 U	0.500 U	0.100 U	2.00 U	
Sulfate	250	2.4	0.22 J	0.7 J	10 U	1.06	1.3 J	1.1 J	1 J	2.00 U	1.00 U	5.00 U	1.00 U	2.00 U	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 R	0.05 U	0.006 U	0.11 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.0300 U	0.00300 U	
Nitrogen, Nitrite	1	ND	ND	0.05 R	0.05 U	0.006 U	0.010 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.00300 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.025 UJ	0.012 U	0.10 U	0.10 U	0.095 UJ	0.120 U	0.0600 U	0.300 U	0.0300 U	0.00600 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	1.9 J	0.882 U	0.272 U	0.939 U	1.8	3.19	2.6 U	1.84 J	1.0 U	1.05 U	2.45	1.55	2.05	
Gross Beta ⁽⁴⁾	50	3.07 J	2.74 J	2.3 J	2.86 J	5.2	2.46 U	2.42 U	2.18 J	5.6	0.0812 U	4.32	5.57	3.49	
Radium-226 ⁽⁵⁾	5	0.916 J	0.714 J	0.526 U	0.784 U	0.9	0.918	1.06	1.04	0.8	0.883	0.593 J	0.893	0.953	
Radium-228 ⁽⁵⁾	5	0.95 J	1.72 U	0.768 J	1.57	1.4	-0.0658 U	1.21 U	0.312 U	1.7	0.814	2.56	1.24	2.60	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	87	61	68	72	74.7	28	34	60	77.2	62.7	52.6	5.00 UJ	51.0	
Total Dissolved Solids	500	150	160	130	110	125	109	107	125	94.0	126	133	130	116	
Total Suspended Solids	NS	28	27	11	8.6	7.25	9.3	9.7	3.9 J	14.0	2.00 J	6.67	9.50	18.0 J	
Field Parameters															
pH (S.U.)	6.5-8.5	7.04	6.1	5.99	5.92	NA	NA	NA	6.34	6.34	6.13	NA	6.38	6.12	
Specific Conductivity (mS/cm)	NS	0.122	0.264	0.268	0.278	NA	NA	NA	0.225	0.156	0.209	NA	0.257	0.217	
Temperature (°c)	NS	16.66	15.47	14.41	15.24	NA	NA	NA	14.57	16.56	14.61	NA	14.15	14.97	
Turbidity (NTU)	NS	8.34	10	0.0	7.3	NA	NA	NA	0.0	0.9	2.0	NA	0.1	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.74	1.57	0.00	NA	NA	NA	0.00	0.00	0.00	NA	0.84	0.00	
Oxidation-Reduction Potential (mV)	NS	-91	-61	-132	-9	NA	NA	NA	-26	-71	-4	NA	-44	42	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-38												
Sample Number:	SMCL	CSW-38-20170705	CSW-38-20171005	CSW-38-20180501	CSW-38-20181023	CSW-38	CSW-38	CSW-38_052120	CSW-38	CSW-38	CSW-38	CSW-38	CSW-38	CSW-38
Date Sampled:	⁽¹⁾	7/5/2017	10/5/2017	5/1/2018	10/23/2018	7/9/2019	11/25/2019	5/21/2020	09/17/2020	4/22/2021	9/28/2021	5/10/2022	9/7/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	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	2.04	0.927	1.09	1.48	0.837	0.659	0.540	0.252	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.0012 J	0.00083 J	0.00084 J	0.0012 J	0.0014 J	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	130	170	220	220	127	144	122	166	92.0	78.5	78.0	42.8	
Iron	0.3	10	11	13	3	6.73	2.93	1.25	0.202	0.156	0.173	0.201	0.152	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.0015 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	10	3.1	3.9	0.76	4.34	0.491 J	0.228 J	0.0818	0.134	0.217	0.314	0.397	
Manganese	0.05	0.18	0.13	0.18	0.039	0.116	0.0446	0.0149	0.0080 U	0.0080 U	0.0080 U	0.008 U	0.0097 J	
Nickel ⁽²⁾	0.073	0.0075	0.0071	0.009	0.012	0.0121	0.0088	0.0068 U	0.0139	0.0109	0.0056 J	0.0057	0.0026 J	
Potassium	NS	21	18	13	10	7.36	5.67	5.69	5.99	5.41	5.10	5.42	5.45	
Sodium	NS	73	48	32	31	36.8	33.3	34.5	29.6	33.2	34.1	36.6	31.6	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.0025 J	0.020 U	0.015 U	0.0043	0.0030	0.0137	0.0029	0.0034 J	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	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	0.458	0.51	0.52	0.482 J	0.460	0.500 U	0.423 J	2.00 U	
Chloride	250	160	92	64	69	59.7	59.5	44.9	52.2	56.5	44.8	37.8	49.9	
Fluoride	2	0.1 U	0.23	0.14 J	0.095 J	0.204	0.16 J	0.18 J	0.204	0.283	0.500 U	0.200 U	2.00 U	
Sulfate	250	160	97	52 J	32	57.5	57	32.5	38.3	54.0	53.2	61.4	44.9	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0864 J	0.0300 U	0.150 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.006 U	0.010 U	0.0041 J	0.0600 U	0.0300 U	0.150 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.034 J	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	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	6.0	0.893 U	1.55 U	1.7 U	0.0701 U	0.0761 U	0.649 J	2.01	
Gross Beta ⁽⁴⁾	50	14.9	11.4	9.45	2.8 U	12.5	3.86	4.66 J	8.1	2.62 J	5.99	5.32	4.63	
Radium-226 ⁽⁵⁾	5	0.28 U	0.268 J	0.294 J	0.293 U	0.3	0.818	0.721 J	0.4	0.226 J	0.278 J	0.217	-0.0668 U	
Radium-228 ⁽⁵⁾	5	0.206 U	0.264 U	0.494 J	0.334 U	0.7 U	1.04 U	0.595 U	0.71	0.0903 U	0.230 U	0.00 U	0.677	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	49	270	380	500	242	243	243	385	177	135	147	5.00 U	
Total Dissolved Solids	500	740	710	66 U	780	468	246	346	546 J	374	332	340	201	
Total Suspended Solids	NS	51	83	45	23	46	100	20.5	2.00 U	2.00 J	15.5	8.00	15.0	
Field Parameters														
pH (S.U.)	6.5-8.5	9.29	11.61	12.05	12.43	NA	NA	12.22	12.29	12.29	11.81	12.35	10.94	
Specific Conductivity (mS/cm)	NS	0.386	1.77	3	2.79	NA	NA	1.28	1.62	1.00	0.705	0.962	0.401	
Temperature (°C)	NS	20.56	17.16	18.88	15.61	NA	NA	14.38	16.51	13.81	14.01	18.15	15.79	
Turbidity (NTU)	NS	35.2	34.9	15.8	7.5	NA	NA	5.5	2.4	3.0	6	1.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	1.89	0.32	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-378	-498	-317	-247	NA	NA	-249	-377	-420	-239	-312	-52	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-39												
Sample Number:	SMCL	CSW-39-20170628	CSW-39-20171002	CSW-39-20180507	CSW-39-20181022	CSW-39	CSW-39	CSW-39_051920	CSW-39	CSW-39	CSW-39	CSW-39	CSW-39	CSW-39
Date Sampled:	⁽¹⁾	6/28/2017	10/2/2017	5/7/2018	10/22/2018	7/11/2019	11/19/2019	5/19/2020	09/23/2020	4/20/2021	9/29/2021	5/2/2022	9/7/2022	
Duplicate of:														
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	1	2.1	11 J	9	0.468	0.763	0.572	0.0466	0.0543	4.38	0.304	2.31	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.00082 J	0.00058 J	0.0010 U	0.0010 U	0.0016 J	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.00022 J	0.00053	0.00031 J	0.002 U	0.00030 J	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	19	27	28	40	52.5	32.1	71.8	157	149	63.4	110	48.8	
Iron	0.3	5.3	1.9	3.9	3.3	0.51	2.93	0.889	0.0656	0.0942	12.0	0.723	8.40	
Lead	0.015	0.0025 U	0.0025 U	0.0023 J	0.0018 J	0.0004 U	0.0015 J	0.00039 J	0.0004 U	0.0004 U	0.0063 J	0.0004 U	0.0024 J	
Magnesium	NS	3.4	1.4	1.7	1.4	0.863	0.938	0.6	0.0584	0.0709	3.92	0.485	3.30	
Manganese	0.05	0.11	0.058	0.064	0.048	0.0088 J	0.0444	0.0195	0.0080 U	0.0080 U	0.172	0.023 J	0.127	
Nickel ⁽²⁾	0.073	0.0033 U	0.002 J	0.0038 J	0.005	0.0051 J	0.0128	0.0052	0.0116	0.0056	0.0176 J	0.0072	0.0178	
Potassium	NS	17	50	39	37	31.9	23.2	21.1	25.3	20.0	13.7	14.5	11.4	
Sodium	NS	38	54	48	48	63.8	54.8	78	91.6	85.0	51.3	79.7	43.6	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.0031 J	0.0059 J	0.015 U	0.0068	0.0071	0.0482	0.0068	0.0161	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.25 J	0.16 J	0.29 J	0.36 J	0.386	0.34 J	0.79	0.965	1.15	0.500 U	0.862	2.00 U	
Chloride	250	40	38	35	42	62.4	64	99.6	149	186	64.4	135	53.3	
Fluoride	2	0.12	0.091 J	0.11	0.11	0.0677	0.46	0.12 J	0.200 U	0.123	0.500 U	0.101 J	2.00 U	
Sulfate	250	16	11	7.2	7.3	9.27	8	6.6	8.50	9.99	9.97 J	8.24 J	14.2	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 UJ	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.006 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 UJ	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.015 J	0.025 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 UJ	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	2.58 U	0.601 U	6.41	4.62	1.1 U	5.48	2.43 U	2.7	2.75	20.5	1.86 J	4.80	
Gross Beta ⁽⁴⁾	50	16.3	39.6	34.4	37	33.6	24.4	16.5	36.0	14.1	28.6	8.90	12.8	
Radium-226 ⁽⁵⁾	5	0.546 J	0.516 J	0.731 J	0.82 U	0.8	0.527 U	0.247 U	1.3	1.2	0.994	0.559	0.655	
Radium-228 ⁽⁵⁾	5	0.369 J	0.783 J	0.474 J	0.608 J	0.9	1.88 U	0.722 U	0.8 U	0.475	1.71 J	1.09	1.85	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	84	130	110	120	160	84.5	177	389	496	44.1	227	79.8	
Total Dissolved Solids	500	200	270	220	260	301	257	330	654	652	286	555	340	
Total Suspended Solids	NS	28	110	200	150	33	111	28.3	2.00 U	4.00 J	420	13	80.0	
Field Parameters														
pH (S.U.)	6.5-8.5	7.78	12.26	10.7	11.6	NA	NA	12.55	12.29	13.05	10.52	12.29	10.79	
Specific Conductivity (mS/cm)	NS	0.343	0.695	0.64	0.879	NA	NA	1.21	1.8	2.31	0.401	2.42	0.474	
Temperature (°c)	NS	17.59	17.52	15.66	14.44	NA	NA	14.60	15.52	14.72	13.96	15.97	16.35	
Turbidity (NTU)	NS	26	70.3	158	122	NA	NA	13.2	2.4	1.7	738	1.7	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.13	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-338	-359	-313	-198	NA	NA	-207	-340	-102	-205	-165	-178	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-1														
Sample Number:	SMCL	PZ-1-20170629	PZ-1-20171006	PZ-1-20180425	PZ-1-20181015	PZ-1	PZ-1	PZ-1_051820	PZ-1	DUP-3	PZ-1	PZ-1	PZ-1	DUP-2	PZ-1	
Date Sampled:	⁽¹⁾	6/29/2017	10/6/2017	4/25/2018	10/15/2018	7/11/2019	11/25/2019	5/18/2020	09/23/2020	9/23/2020	4/21/2021	9/21/2021	5/4/2022	5/4/2022	8/30/2022	
Duplicate of:										PZ-1				PZ-1		
Total Inorganics		mg/L	mg/L	mg/L	mg/L	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	0.0421 J	0.050 U	0.0183 J	0.0261 J	0.0229 J	0.0080 U	0.0490 J	0.0080 U	0.0080 U	0.0040 U	U
Arsenic	0.01	0.0028 J	0.003 U	0.003 U	0.003 U	0.001 U	0.00046 J	0.0005 J	0.0016 J	0.0021 U	0.0028 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	U
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0020 U	U
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0020 U	U
Calcium	NS	270	230 J	210	250	222	217	213	192	189	169	204	180	178	185	
Iron	0.3	160	140 J	130	160	138	138	132	124	121	114	136	115	114	97.6	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.001 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0020 U	U
Magnesium	NS	280	240 J	220	270	248	235	223	217	212	185	228	205	203	194	
Manganese	0.05	210	36 J	33	37	35.5	30.2	35.3	32.9	32.9	28.3	28.6	27.7	27.7	24.1	
Nickel ⁽²⁾	0.073	0.0032 J	0.0022 J	0.005 U	0.005 U	0.0073 J	0.0028 J	0.003 U	0.0058	0.0056	0.0193	0.0062 J	0.0071	0.0073	0.0061 J	J
Potassium	NS	33	29 J	27	32	30.5	29.7	30.7	27.4	26.6	24.6	28.8	26.1	25.7	25.1	
Sodium	NS	2700	430 J	400	490	468	442	449	429	423	370	448	411	399	373	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.0069 J	0.020 U	0.015 U	0.0028	0.0036	0.0035	0.0146	0.0031	0.0032	0.0042 J	J
Anions		mg/L	mg/L	mg/L	mg/L	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	2.01	3.9	3.8	3.82	3.58	3.60	4.19	3.63	3.50	3.75 J	J
Chloride	250	810	750	720	780	564	692	763	725	678	660	665	592	575	602	
Fluoride	2	2.5 U	0.061 J	2.5 U	2.5 U	0.0205	0.89	0.52	0.200 U	0.200 U	0.264	0.301	0.165 J	0.164 J	2.00 U	U
Sulfate	250	1400	1300	1300 J	1300	1320	1110	1400	1120	1050	888	1120	1090	1090	924	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 R	0.25 U	0.892	0.34	1	0.0600 U	0.0600 U	0.0407 J	0.0779 J	0.0300 U	0.0300 U	0.00300 U	U
Nitrogen, Nitrite	1	ND	ND	0.05 R	0.25 U	0.006 U	0.010 U	0.005 U	0.0600 U	0.120 U	0.0300 U	0.0600 U	0.0300 U	0.0300 U	0.00300 U	U
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.029 J	0.02 J	0.892	0.34	1	0.120 U	0.0600 U	0.0600 U	0.120 U	0.0600 U	0.0600 U	0.00600 U	U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	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	5.3	-3.74 U	2.25 U	4.3 U	3.9 U	1.47 U	2.43 U	-0.815 U	0.000 U	8.36	
Gross Beta ⁽⁴⁾	50	37.7	13.5	21	10.2 U	34.9	26.7	19.3	33.6	47.6	12	31.8	25.6	25.9	27.8	
Radium-226 ⁽⁵⁾	5	0.361 J	0.318 J	0.273 U	0.503 U	2.9	0.589	1.17	1.0	1.2	0.5	0.645	0.238	0.557	0.444	
Radium-228 ⁽⁵⁾	5	0.935 J	1.6 U	1.11	1.83	1.4	2.19 U	0.394 U	1.1	1.2	0.712	1.83	1.38	1.28	2.14	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	510	550	550	670	580	401	542	597	656	506	269	229	215	486	
Total Dissolved Solids	500	4100	4200	3200	3600	3770	3170	3570	3210	3210	3040	3690	3320	3150	3230	
Total Suspended Solids	NS	220	160	59	48	120	125	63.5	128	150	70.0	111	133	120	100	
Field Parameters																
pH (S.U.)	6.5-8.5	6.55	6.15	6.37	6.16	NA	NA	6.36	6.26	NA	6.38	6.02	6.37	NA	6.15	
Specific Conductivity (mS/cm)	NS	5.39	5.24	4.73	5.1	NA	NA	5.07	4.15	NA	4.13	5.15	5.65	NA	4.31	
Temperature (°C)	NS	18.4	18.37	16.16	16.85	NA	NA	16.61	14.95	NA	15.67	14.82	13.72	NA	14.68	
Turbidity (NTU)	NS	3.04	1.09	1.98	7.2	NA	NA	9.9	4.1	NA	4.2	16.6	0.0	NA	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.03	NA	NA	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	
Oxidation-Reduction Potential (mV)	NS	-65	-128	-87	-79	NA	NA	-111	-96	NA	-28	-84	-86	NA	23	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-2															
Sample Number:	SMCL	PZ-2-20170705	PZ-2-20171005	DUP-02-20171005	PZ-2-20180501	DUP-02-20180501	PZ-2-20181023	PZ-2	PZ-2	PZ-2_052120	PZ-2	PZ-2	PZ-2	DUP-2-PZ-2	PZ-2	PZ-2	
Date Sampled:	⁽¹⁾	7/5/2017	10/5/2017	10/5/2017	5/1/2018	5/1/2018	10/23/2018	7/9/2019	11/25/2019	5/21/2020	9/17/2020	4/22/2021	9/22/2021	9/22/2021	5/10/2022	9/7/2022	
Duplicate of:				PZ-2-20171005		PZ-2-20180501											
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.098 J	0.024 J	0.018 J	0.05 U	0.05 U	0.024 J	0.0085 J	0.0342 J	0.0183 J	0.0222 J	0.0917	0.0400 U	0.0400 U	0.0080 U	0.0364 J	
Arsenic	0.01	0.0045	0.0044	0.0043	0.005	0.0055	0.0053	0.0051	0.0052	0.005	0.0053	0.0066	0.0044	0.0048	0.0042	0.0049	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.00022 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	14	9.8	9.5	11	11	11	25	18.1	23.2	24.5	18.8	17.1	16.8	21.5	16.8	
Iron	0.3	99	76	74	76	81	68	68	64.5	67.6	66.2	60.7	54.3	56.7	53.8	56.7	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.0013 U	0.0004 U	0.0006 J	0.0020 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	12	9	8.5	9.4	10	8.7	9.64	7.72	9.77	9.46	9.76	8.26	8.40	10.4	9.01	
Manganese	0.05	1.1	0.89	0.86	0.86	0.92	0.78	0.802	0.751	0.862	0.884	0.843	0.802	0.834	1.25	0.941	
Nickel ⁽²⁾	0.073	0.0047 J	0.0029 J	0.0034 J	0.005 U	0.0019 J	0.005 U	0.0029 J	0.0039 J	0.0016 U	0.0024	0.0093	0.0050 J	0.0034 J	0.005	0.0037 J	
Potassium	NS	2	1.3	1.3	1.3	1.4	1.2	1.81	1.58	1.52	1.69	1.45	1.39	1.37	1.74	1.50	
Sodium	NS	86	67	65	55	59	50	56.5	57.2	56.1	53.3	46.0	50.9	46.4	52.8	49.5	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0061 J	0.020 U	0.015 U	0.0046	0.0054	0.0819	0.0827	0.0074	0.0021 J	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.32 J	0.28	0.28	0.51 J	0.5 J	1 U	0.326	0.19 J	0.36 J	0.331 J	0.320	0.249 J	0.292 J	0.312 J	2.00 U	
Chloride	250	30	29	29	27 J	27 J	26	35.6	33.4	29.1	30.8	32.6	25.6	26.2	25.2	27.1	
Fluoride	2	0.097 J	0.1	0.098 J	0.11 J	0.11 J	0.2 U	0.0246	0.056 J	0.081 J	0.200 U	0.100 U	0.200 U	0.200 U	0.200 U	2.00 U	
Sulfate	250	170	110	110	100 J	99 J	85	83.2	68.7	71.4	86.8	88.6	74.1	78.6	113	94.6	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	ND	0.1 U	0.1 U	0.5 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	ND	0.1 U	0.1 U	0.5 U	0.006 U	0.0032 J	0.005 U	0.0600 U	0.0300 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.120 U	0.120 U	0.120 U	0.1200 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	3.36	1.91 U	1.61 U	3.61 J	-0.803 U	0.493 U	2.6	4.45	2.91 U	3.4	2.00	2.33	3.02	5.27	2.29	
Gross Beta ⁽⁴⁾	50	3.58 U	2.38 J	0.538 U	2.05 J	1.19 U	1.47 U	5.3	3.15	2.6 U	7.1	0.809 J	3.38	2.67	4.80	1.97	
Radium-226 ⁽⁵⁾	5	1.25	0.86 J	1.02	1.09	1.05	0.875 U	1.5	1.4	1.62	1.1	0.791	0.916	0.869	0.872	0.874	
Radium-228 ⁽⁵⁾	5	1.04	0.486 U	0.602 U	0.55 J	0.965 J	0.735 J	0.9	1.65	0.582 U	0.71	0.637	2.18	0.778	1.33	1.38	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	63	110	92	120	130	88	99	74	105	91.4	85.0	77.3	75.4	84.0	63.9	
Total Dissolved Solids	500	340	380	390	330	330	300	302	411	240	308 J	328	295	265	338	316	
Total Suspended Solids	NS	110	80	98	48	51	110	122	115	75.5	126	64.0	81.0	83.0	68.0	34.0	
Field Parameters																	
pH (S.U.)	6.5-8.5	6.75	6.71	NA	6.98	NA	6.85	NA	NA	7.29	7.1	6.71	6.66	NA	6.90	6.60	
Specific Conductivity (mS/cm)	NS	0.716	0.72	NA	0.712	NA	0.593	NA	NA	0.525	0.385	0.462	0.461	NA	0.642	0.483	
Temperature (°c)	NS	17.79	18.42	NA	16.65	NA	17.15	NA	NA	15.48	14.74	14.08	13.80	NA	13.94	14.58	
Turbidity (NTU)	NS	8.3	2.46	NA	9.81	NA	7.33	NA	NA	15.9	15.8	20.4	7.0	NA	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	NA	0.00	NA	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-134	-171	NA	-185	NA	-145	NA	NA	-210	-219	-110	-119	NA	-123	-131	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-3													
Sample Number:	SMCL	PZ-3-20170707	PZ-3-20171016	PZ-3-20180502	PZ-3-20181019	PZ-3	PZ-3	PZ-3_052120	PZ-3	PZ-3	PZ-3	PZ-3	DUP-3	PZ-3	
Date Sampled:	⁽¹⁾	7/7/2017	10/16/2017	5/2/2018	10/19/2018	7/11/2019	11/25/2019	5/21/2020	9/16/2020	4/20/2021	9/23/2021	5/11/2022	5/11/2022	9/8/2022	
Duplicate of:													PZ-3		
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	19	16	16	16 J	13.7	13.5	14.5	13.3	11.4	11.0	10.9	10.8	10.0	
Arsenic	0.01	0.0042	0.0057	0.0077	0.0045	0.0018 J	0.0158	0.0102 J	0.0010 U	0.0041	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0089	0.0063	0.0084	0.0084	0.0052 J	0.0071	0.0079 J	0.0040 J	0.0057	0.0051 J	0.0041	0.0041	0.0030	
Cadmium	0.005	0.0004 U	0.001	0.0011	0.0013	0.0013 J	0.00070 J	0.0012 J	0.0015 J	0.0014 J	0.0020 U	0.0015 J	0.0015 J	0.0020 U	
Calcium	NS	170	140	170	150	149	140	128	116	113	106	109	109	104	
Iron	0.3	280	240	290	260	253	249	219	204	199	185	177	176	174	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0023	0.0016 U	0.0033	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0020 U	
Magnesium	NS	140	120	140	130	131	125	116	108	102	94.9	96.8	96.0	92.3	
Manganese	0.05	590	120	92	110	118	98.8	81.9	93.2	85.0	77.8	79.8	79.4	75.7	
Nickel ⁽²⁾	0.073	0.38	0.34	0.36	0.33 J	0.35	0.285	0.323	0.272	0.227	0.247	0.192	0.188	0.111	
Potassium	NS	14	12	14	13 J	13.1	11.2	11.8	10.5	10.3	9.27	9.45	9.44	9.27	
Sodium	NS	270	240	280	250	260	244	226	218	204	186	193	193	176	
Zinc	5	0.72	0.64	0.66	0.65	0.636	0.586	0.667 U	0.428	0.425	0.475 J	0.0457	0.0455	0.463	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	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	1.76	0.66	1.5	1.85	1.78	1.65	1.52	1.49	2.00 U	
Chloride	250	340	330	280	320	273	274	252	297	305	248	207	205 J	239	
Fluoride	2	0.82 J	0.35 J	0.43	0.42	0.305	0.57	0.46	0.482	0.362	0.559	0.416 J	0.399 J	2.00 U	
Sulfate	250	2300	1800	2400	3500	2410	1550	1850	1290	1660	1460	1040	1030	1410	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.0829	0.11 U	0.1 U	0.0600 UJ	0.0300 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 UJ	0.006 U	0.010 U	0.005 U	0.0600 UJ	0.0300 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 U	0.025 U	0.04 J	0.0829	0.10 U	0.095 U	0.120 U	0.0600 U	0.120 U	0.120 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	-1.48 U	4.74 U	3.47 U	4.97 U	8.9	8.22 U	3.82 U	7.2	9.11 J	1.16 U	2.74 J	3.28 J	6.23 J	
Gross Beta ⁽⁴⁾	50	21.9	15.3	8.88 U	11.3	31.6	12.3	19.3	25.4	-0.577 U	9.6 U	20.0	12.3	15.5	
Radium-226 ⁽⁵⁾	5	0.61 J	0.677 J	0.382 J	0.742 U	2.6	0.73	0.505 U	2.1	3.31	0.807	0.673	1.25	0.600	
Radium-228 ⁽⁵⁾	5	2	2.88 U	1.69	1.96	2.2	2.61	2.49 J	3.1	0.361	0 U	3.08	2.26	2.76	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	5 U	5 U	5 U	12.6	10 U	4 U	56.8	5.00 U	5.00 U	9.04 J	5.00 U	5.00 U	
Total Dissolved Solids	500	3000	3400	3200	3200	3320	2740	2620	2800	2820	2330 J	2520	2640	2210	
Total Suspended Solids	NS	34	5.6	1200	4.4	22	19	4.6	8.00 J	8.00 J	2.00 R	13.0	6.43 J	3.00 J	
Field Parameters															
pH (S.U.)	6.5-8.5	4.26	4.18	5.02	4.55	NA	NA	4.10	4.13	4.24	3.80	4.20	NA	3.53	
Specific Conductivity (mS/cm)	NS	3.2	3.74	3.18	3.42	NA	NA	3.10	2.7	2.99	2.74	3.49	NA	2.90	
Temperature (°c)	NS	18.88	16.87	21.75	16.14	NA	NA	16.64	15.86	14.69	13.85	15.04	NA	15.08	
Turbidity (NTU)	NS	5.93	4.96	8.8	9.96	NA	NA	1.7	1.4	26.8	5.7	2.3	NA	3.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	0.00	
Oxidation-Reduction Potential (mV)	NS	156	123	108	155	NA	NA	172	187	192	278	243	NA	281	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-4													
Sample Number:	SMCL	PZ-4-20170717	PZ-4-20171004	PZ-4-20180503	PZ-4-20181019	PZ-4	PZ-4	PZ-4_052220	PZ-4	PZ-4	DUP-2-PZ-4	PZ-4	PZ-4	PZ-4	
Date Sampled:	⁽¹⁾	7/17/2017	10/4/2017	5/3/2018	10/19/2018	7/15/2019	11/20/2019	5/22/2020	9/24/2020	4/22/2021	4/22/2021	9/22/2021	5/3/2022	9/1/2022	
Duplicate of:															
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.16	1.2 J	5.7	2.2 J	4.73	4.83	12.7	7.31	9.62	9.60	9.04	15.3	11.5	
Arsenic	0.01	0.0021 J	0.0042	0.0046	0.0039	0.0014 J	0.011	0.0119 J	0.0025	0.0033	0.0028	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.00031 J	0.0033	0.0056	0.0053	0.0069 J	0.0084	0.0164	0.0101	0.0122	0.0119	0.0096 J	0.0141	0.0055 J	
Cadmium	0.005	0.00016 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.02 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Calcium	NS	370	260 J	200	190	143	132	164	110	103	102	92.4	116	92.2	
Iron	0.3	130	180 J	170	170	148	128	189	134	129	128	111	146	113	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00025 J	0.01 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	100	94 J	92	92	83.6	73	102	72.2	72.8	72.3	61.7	86.1	65.8	
Manganese	0.05	54	79 J	77	67	57.4	47.8	61.1	53.0	47.5	46.5	39.8	50.4	42.2	
Nickel ⁽²⁾	0.073	0.022	0.076 J	0.15	0.14 J	0.169	0.167	0.298	0.155	0.193	0.175	0.197	0.203	0.0804	
Potassium	NS	15	9.7	20	7.6 J	8.83	10.3	11.6	6.75	6.00	5.97	6.02	6.94	6.92	
Sodium	NS	210	170 J	160	140	129	119	157	121	108	106	99.7	133	110	
Zinc	5	0.02 U	0.03 J	0.064	0.059	0.154	0.169	0.522 U	0.175	0.244	0.230	0.307	0.339	0.325	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	1.2	1.4	2.1 J	3.6	0.874	0.55	1	0.806	0.894	0.890	0.839	0.799	2.00 U	
Chloride	250	300	270	220	230	170	194	210	176	196	195	158	164	196	
Fluoride	2	0.28	0.89 J	0.49 J	0.55	0.619	1.4	1.3	0.819	0.877	0.925	1.08	0.853	2.00 U	
Sulfate	250	1200	1400	1500	1500	1130	1340	1430	1030	1070	1050	983	1210 J	1160	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	0.0068 J	0.0025 J	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.0300 U	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 UJ	0.0115 J	0.0032 J	0.005 U	0.0600 U	0.0300 U	0.0300 U	0.0600 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 UJ	0.028 J	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.0600 U	0.120 U	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	3.39 U	-1.19 U	7.57 U	0.711 U	9.6	3.56 U	6.43 U	9.9	10.9	6.28 J	6.12	7.54	11.1	
Gross Beta ⁽⁴⁾	50	13.5	3.43 U	14.7	0.328 U	15	11.6	10.9	18.5	7.47	5.45 J	9.39	18.3	14.9	
Radium-226 ⁽⁵⁾	5	0.553 J	0.385 J	0.733 J	0.964 U	2.3	0.599	0.445 J	2.7	0.764	1.03	1.84	3.10	1.71	
Radium-228 ⁽⁵⁾	5	0.747 U	0.582 J	1.31	1.31	2.2	2.18	1.29 U	2.9	3.50 J	1.55 J	2.9	4.55	4.66	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	43	81	66	59	31.5	17.5	4 J	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	
Total Dissolved Solids	500	2400	2700	2500	2300	2100	1860	2200	1770	1770 J	915 J	1660	2000	1750	
Total Suspended Solids	NS	84	110	43	19	17.6	22.3	22.1	15.0 J	2.00 U	5.00 J	3.00 J	1.00 J	7.00 J	
Field Parameters															
pH (S.U.)	6.5-8.5	7.27	6.36	5.47	5.72	NA	NA	4.87	4.93	4.58	NA	4.51	4.71	3.92	
Specific Conductivity (mS/cm)	NS	2.92	3.3	3.14	2.82	NA	NA	2.99	1.79	2.01	NA	1.86	2.80	2	
Temperature (°c)	NS	22.57	18.5	23.2	16.12	NA	NA	15.32	14.14	13.99	NA	13.97	13.57	14.52	
Turbidity (NTU)	NS	9.24	15.8	17.3	6.9	NA	NA	26.1	3.7	2.8	NA	2	0.0	0.0	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-114	-99	12	11	NA	NA	113	99	123	NA	152	157	290	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
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		PZ-5	PZ-5	PZ-5_051820	PZ-5	PZ-5	PZ-5
Date Sampled:	⁽¹⁾		10/16/2017	5/9/2018	10/30/2018		7/15/2019	11/20/2019	5/18/2020	09/29/2020	5/6/2021	10/5/2021
Duplicate of:												
Total Inorganics		mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.05 U	0.05 U	0.028 J	0.022 J*		0.103	0.0197 J	0.0289 J	0.0770	0.872	0.249
Arsenic	0.01	0.003 U	0.0019 J	0.0018 J	0.0017 J*		0.0014 J	0.0015 J	0.00088 J	0.0010 U	0.0016 J	0.0010 U
Beryllium	0.004	0.0004 U	0.00022 J	0.0004 U	0.0004 U*		0.002 U	0.000066 J	0.0002 J	0.0004 U	0.0005 J	0.0020 U
Cadmium	0.005	0.0004 U	0.00024 J	0.00058	0.0004 J*		0.003	0.0014 J	0.0014 J	0.0038	0.0088	0.0055 J
Calcium	NS	21	27	43	50 *		69	45	33.2	73.8	81.7	51.3
Iron	0.3	24	20	5.8	8.8 *		4.61	7.34	2.94	7.07	5.90	0.899
Lead	0.015	0.0013 J	0.0025 U	0.0025 U	0.0025 U*		0.0024	0.00038 J	0.00018 J	0.00050 U	0.0070	0.0020 U
Magnesium	NS	15	19	21	18 *		27.6	18.3	17.2	48.8	22.0	26.1
Manganese	0.05	11	15	16	13 *		17.8	14.6	12.1	39.7	17.3	21.7
Nickel ⁽²⁾	0.073	0.042	0.11	0.11	0.082 *		0.157	0.108	0.129	0.327	0.150	0.226
Potassium	NS	5.9	5.5	6.5	6.6 *		6.59	5.94	6.55	9.83	7.21	8.26
Sodium	NS	22 J	24	31	22 *		15.7	19.2	22.4	31.2	11.3	13.5
Zinc	5	0.048	0.18	0.35 J	0.16 *		0.629	0.563	0.36	0.888	0.886	0.674
Anions		mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.32 J	0.3	0.41 J	0.35 J		0.288	0.15 J	0.13 J	0.200 U	0.246 J	0.500 U
Chloride	250	24	34	23	22		12.6	22.5	29.1	23.3	10.3	11.1 J
Fluoride	2	0.1 U	0.06 UJ	0.1 U	0.1 U		0.02	0.065 J	0.1 U	0.200 U	0.143	0.500 U
Sulfate	250	130	180	210	190 J		159	210	200	580	197	236
Nitrogen		mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	0.0021 J	0.23	0.24		0.817	0.12	0.21	0.0600 U	2.87 J	0.343 J
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U		0.00948 J	0.0081 J	0.005 U	0.0600 U	0.0370 J	0.150 U
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.029 J	0.28	0.18 *		0.826	0.13	0.21	0.120 U	2.91 J	0.343 J
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	0.908 U	0.0767 U	3.02	0 U		5.2	0.343 U	2.43 J	1.5	9.49	3.38
Gross Beta ⁽⁴⁾	50	5.09	4.31	5.81	6.88		11.1	8.17	4.42 J	15.6	13.1	13.1
Radium-226 ⁽⁵⁾	5	0.113 J	0.122 J	0.275 J	0.644 J		1	0.823	1.39	0.8	3.41	0.557 J
Radium-228 ⁽⁵⁾	5	0.868 U	0.836 U	0.402 U	1.38 U		1.4	0.0534 U	-0.041 U	1.6	1.12	1.86
Miscellaneous		mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	46	39	56	82 *		91.6	68.5	10.5	15.2	103	40.8
Total Dissolved Solids	500	140	440	430	440		481	390	346	842	606	560
Total Suspended Solids	NS	7.9 U	3.2	3.1	10		61	18.4	1.7 J	2.00 U	41.7	22.0
Field Parameters												
pH (S.U.)	6.5-8.5	4.2	5.24	5.43	6.12		NA	NA	5.89	5.4	NA	NA
Specific Conductivity (mS/cm)	NS	0.474	0.615	0.681	0.655		NA	NA	0.461	0.65	NA	NA
Temperature (°c)	NS	17.13	14.38	16.85	16.89		NA	NA	14.97	14.38	NA	NA
Turbidity (NTU)	NS	6.17	1.81	3.64	3.77		NA	NA	2.7	2.3	NA	NA
Dissolved Oxygen (mg/L)	NS	3.2	1.73	0.79	0.00		NA	NA	0.00	0.00	NA	NA
Oxidation-Reduction Potential (mV)	NS	334	167	55	-3		NA	NA	101	126	NA	NA

Table 4
Data Summary of Analytical Results
Comparison July 2017 through September 2022
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Data Qualifiers:
B -- Analyte is found in the associated blank as well as in the sample
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 requirement:
⁽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 procedure:

ATTACHMENT B - FIGURES

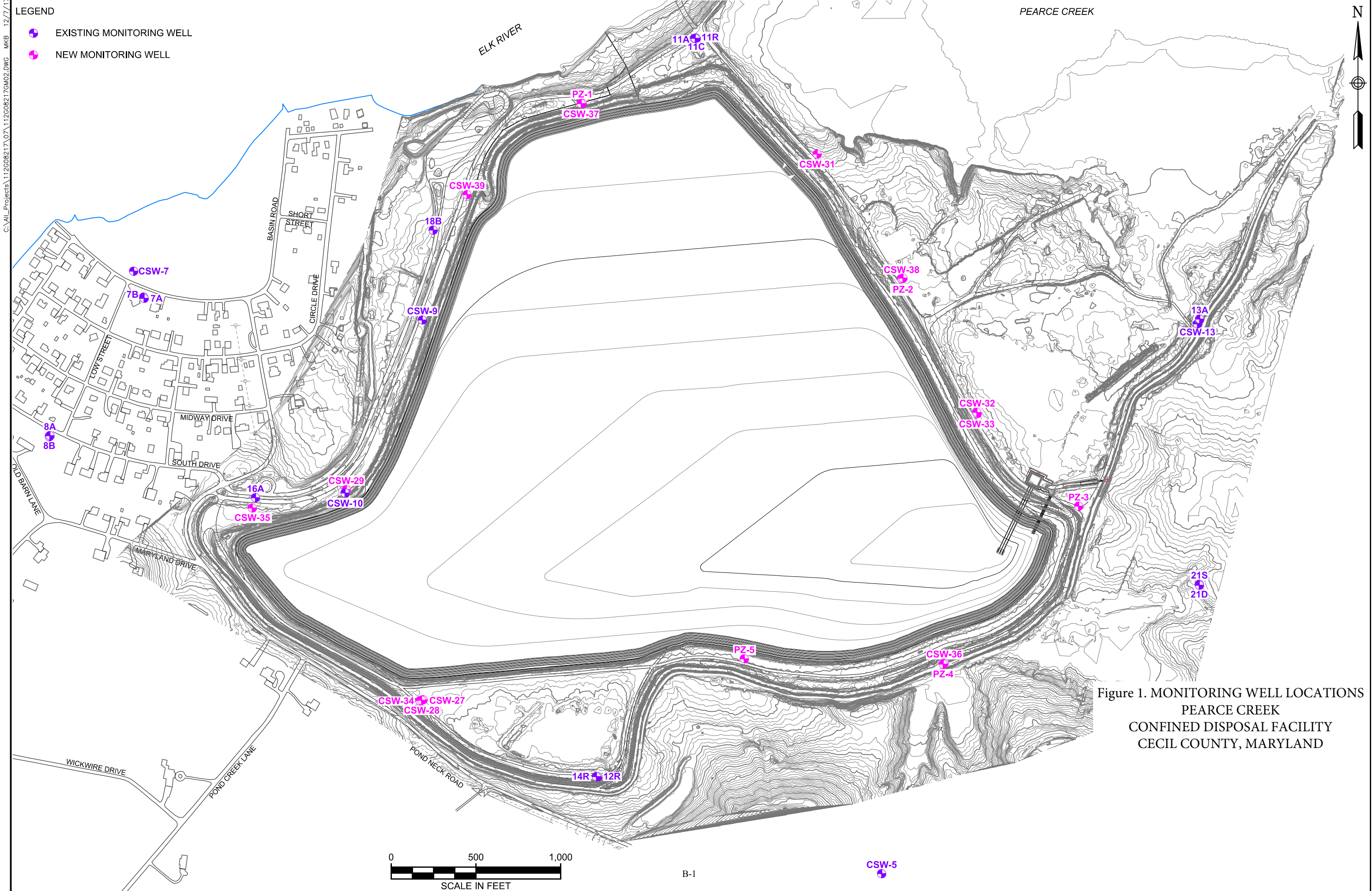


Figure 2. MONITORING WELLS IN THE MAGOTHY AQUIFER



Figure 3. MONITORING WELLS IN THE UPPER PATAPSCO SHALLOW AQUIFER



Figure 4. MONITORING WELLS IN THE UPPER PATAPSCO DEEP AQUIFER



ATTACHMENT C – GROUNDWATER ELEVATION DATA

Well ID	NAD83		Elevation NAVD88 (feet)			Depth to Water May 15, 2022	Groundwater Elevation
	Northing	Easting	Top of Casing	Top of PVC	Ground		
Magothy			ft AMSL			ft AMSL	
CSW-27	641445.523	1598175.768	35.57	35.26	31.92	30.13	5.13
CSW-29	642684.596	1597722.308	31.32	31.20	28.16	26.85	4.35
PZ-1	644964.826	1599115.090	22.63	22.51	19.35	21.15	1.36
PZ-2	643933.022	1601006.901	25.66	25.45	22.56	17.75	7.70
PZ-3	642586.996	1602043.597	24.03	23.87	21.11	15.95	7.92
PZ-4	641654.704	1601244.735	24.38	24.20	21.25	17.71	6.49
PZ-5	641686.897	1600070.702	42.75	42.62	39.52	35.64	6.98
CSW-5	640418.877	1600881.043	47.03	46.82	46.82	41.21	5.61
CSW-32	643133.172	1601445.241	25.60	25.49	22.78	17.63	7.86
CSW-13	643662.830	1602744.431	17.81	17.26	15.25	9.55	7.71
7A	643813.575	1596529.126	11.52	11.07	11.07	6.61	4.46
8B	642997.164	1595969.647	25.79	25.49	23.55	22.36	3.13
11C	645349.364	1599787.526	23.88	23.51	20.74	21.20	2.31
12R	640990.466	1599205.972	39.79	39.48	36.69	NM	NM
16A	642637.393	1597186.522	24.41	24.18	21.48	19.76	4.42
21S	642126.368	1602756.547	24.13	23.93	21.39	16.76	7.17
Patapsco - Shallow							
CSW-28	641442.561	1598166.430	35.56	35.23	32.11	30.75	4.48
CSW-31	644664.678	1600500.662	24.02	23.90	21.12	20.45	3.45
CSW-33	643140.598	1601442.797	25.57	25.45	22.77	22.20	3.25
CSW-37	644963.200	1599108.262	22.04	21.84	19.16	19.47	2.37
CSW-7	643973.655	1596467.431	8.05	7.74	7.74	4.90	2.84
CSW-9	643685.642	1598170.755	31.22	30.85	27.53	26.69	4.16
CSW-10	642664.840	1597714.757	32.21	31.91	28.95	28.22	3.69
8A	643003.316	1595973.516	25.61	25.43	23.52	21.91	3.52
11R	645348.041	1599781.345	23.76	23.43	20.70	20.90	2.53
13A	643691.094	1602757.833	19.72	19.35	15.95	16.11	3.24
14R	640991.624	1599197.731	39.58	39.36	36.64	34.65	4.71
18B	644215.947	1598234.884	30.38	30.10	26.74	26.35	3.75
21D	642120.688	1602755.418	23.89	23.53	21.14	19.75	3.78
Patapsco - Deep							
CSW-34	641438.833	1598156.188	35.70	35.47	32.56	31.90	3.57
CSW-35	642576.531	1597167.435	28.02	27.82	24.69	26.95	0.87
CSW-36	641660.783	1601250.337	24.30	24.13	21.07	20.33	3.80
CSW-38	643929.086	1600999.147	26.64	26.16	22.64	23.39	2.77
CSW-39	644425.568	1598434.781	31.19	30.89	27.65	29.55	1.34
7B	643821.173	1596527.150	11.32	10.78	10.78	9.50	1.28
11A	645346.666	1599775.912	23.75	23.51	20.78	20.95	2.56

Notes:

Depths to water in feet below top of casing (TOC)

Groundwater elevations in feet above mean sea level (AMSL)

Horizontal Datum: NAD 83 Maryland State Plane

NM = Not Measured

Well ID	NAD83		Elevation NAVD88 (feet)			Depth to Water August 29, 2022	Groundwater Elevation
	Northing	Easting	Top of Casing	Top of PVC	Ground		
Magothy			ft AMSL			ft AMSL	
CSW-27	641445.523	1598175.768	35.57	35.26	31.92	31.00	4.26
CSW-29	642684.596	1597722.308	31.32	31.20	28.16	26.93	4.27
PZ-1	644964.826	1599115.090	22.63	22.51	19.35	NM	NM
PZ-2	643933.022	1601006.901	25.66	25.45	22.56	18.90	6.55
PZ-3	642586.996	1602043.597	24.03	23.87	21.11	19.64	4.23
PZ-4	641654.704	1601244.735	24.38	24.20	21.25	20.50	3.70
PZ-5	641686.897	1600070.702	42.75	42.62	39.52	38.22	4.40
CSW-5	640418.877	1600881.043	47.03	46.82	46.82	43.61	3.21
CSW-32	643133.172	1601445.241	25.60	25.49	22.78	18.80	6.69
CSW-13	643662.830	1602744.431	17.81	17.26	15.25	13.00	4.26
7A	643813.575	1596529.126	11.52	11.07	11.07	7.09	3.98
8B	642997.164	1595969.647	25.79	25.49	23.55	22.48	3.01
11C	645349.364	1599787.526	23.88	23.51	20.74	22.12	1.39
12R	640990.466	1599205.972	39.79	39.48	36.69	35.12	NM
16A	642637.393	1597186.522	24.41	24.18	21.48	9.82	14.36
21S	642126.368	1602756.547	24.13	23.93	21.39	20.54	3.39
Patapsco - Shallow							
CSW-28	641442.561	1598166.430	35.56	35.23	32.11	31.48	3.75
CSW-31	644664.678	1600500.662	24.02	23.90	21.12	21.09	2.81
CSW-33	643140.598	1601442.797	25.57	25.45	22.77	23.50	1.95
CSW-37	644963.200	1599108.262	22.04	21.84	19.16	19.60	2.24
CSW-7	643973.655	1596467.431	8.05	7.74	7.74	4.70	3.04
CSW-9	643685.642	1598170.755	31.22	30.85	27.53	26.95	3.90
CSW-10	642664.840	1597714.757	32.21	31.91	28.95	28.59	3.32
8A	643003.316	1595973.516	25.61	25.43	23.52	21.96	3.47
11R	645348.041	1599781.345	23.76	23.43	20.70	20.85	2.58
13A	643691.094	1602757.833	19.72	19.35	15.95	17.26	2.09
14R	640991.624	1599197.731	39.58	39.36	36.64	NM	NM
18B	644215.947	1598234.884	30.38	30.10	26.74	26.75	3.35
21D	642120.688	1602755.418	23.89	23.53	21.14	21.63	1.90
Patapsco - Deep							
CSW-34	641438.833	1598156.188	35.70	35.47	32.56	32.91	2.56
CSW-35	642576.531	1597167.435	28.02	27.82	24.69	27.40	0.42
CSW-36	641660.783	1601250.337	24.30	24.13	21.07	21.91	2.22
CSW-38	643929.086	1600999.147	26.64	26.16	22.64	24.44	1.72
CSW-39	644425.568	1598434.781	31.19	30.89	27.65	29.85	1.04
7B	643821.173	1596527.150	11.32	10.78	10.78	9.71	1.07
11A	645346.666	1599775.912	23.75	23.51	20.78	21.49	2.02

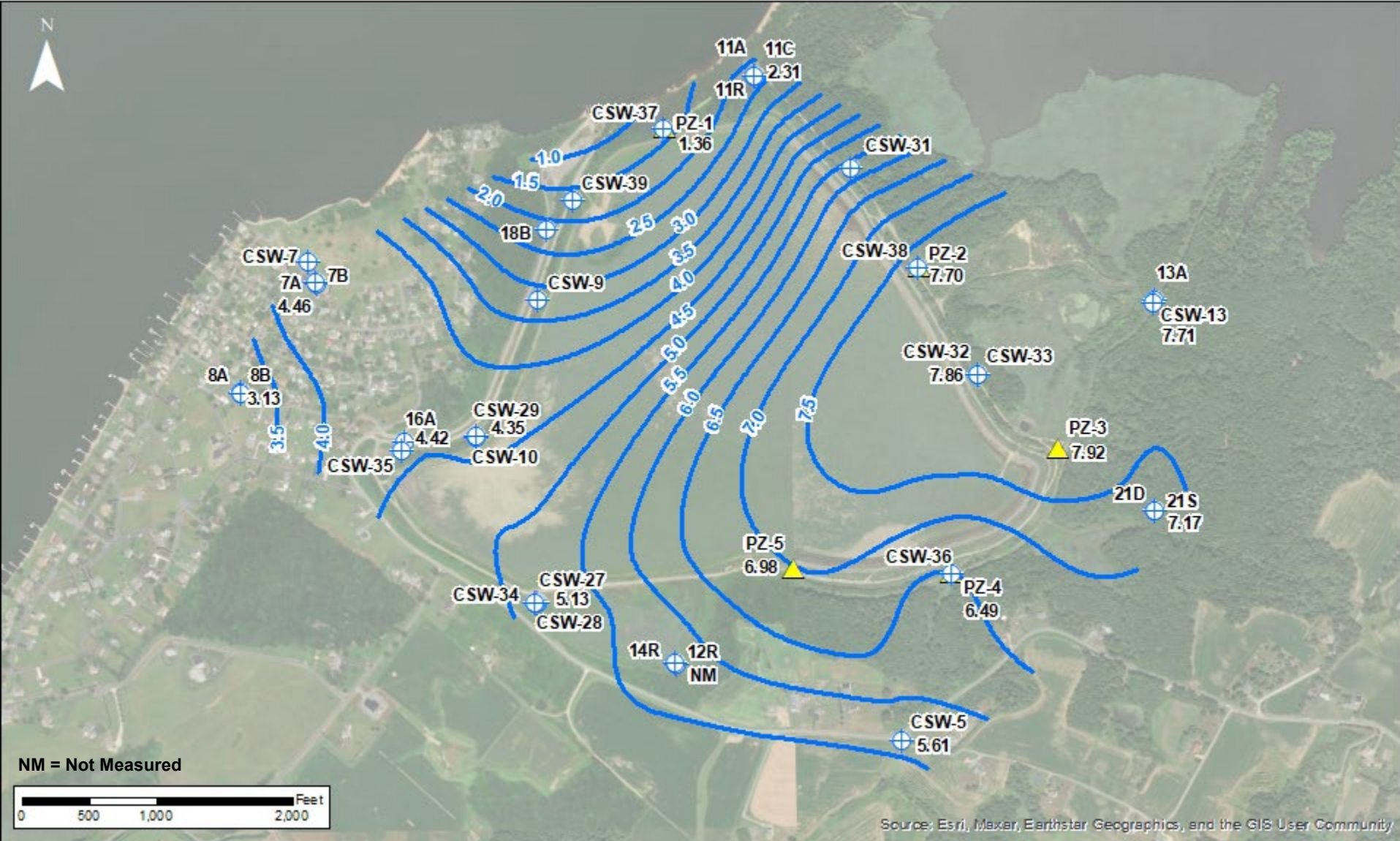
Notes:

Depths to water in feet below top of casing (TOC)

Groundwater elevations in feet above mean sea level (AMSL)

Horizontal Datum: NAD 83 Maryland State Plane

NM = Not Measured



GROUNDWATER ELEVATIONS (MAGOTHY AQUIFER), MAY 15, 2022 2022 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND



GROUNDWATER ELEVATIONS (UPPER PATAPSCO AQUIFER - SHALLOW), MAY 15, 2022 **2022 SUMMARY REPORT**

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

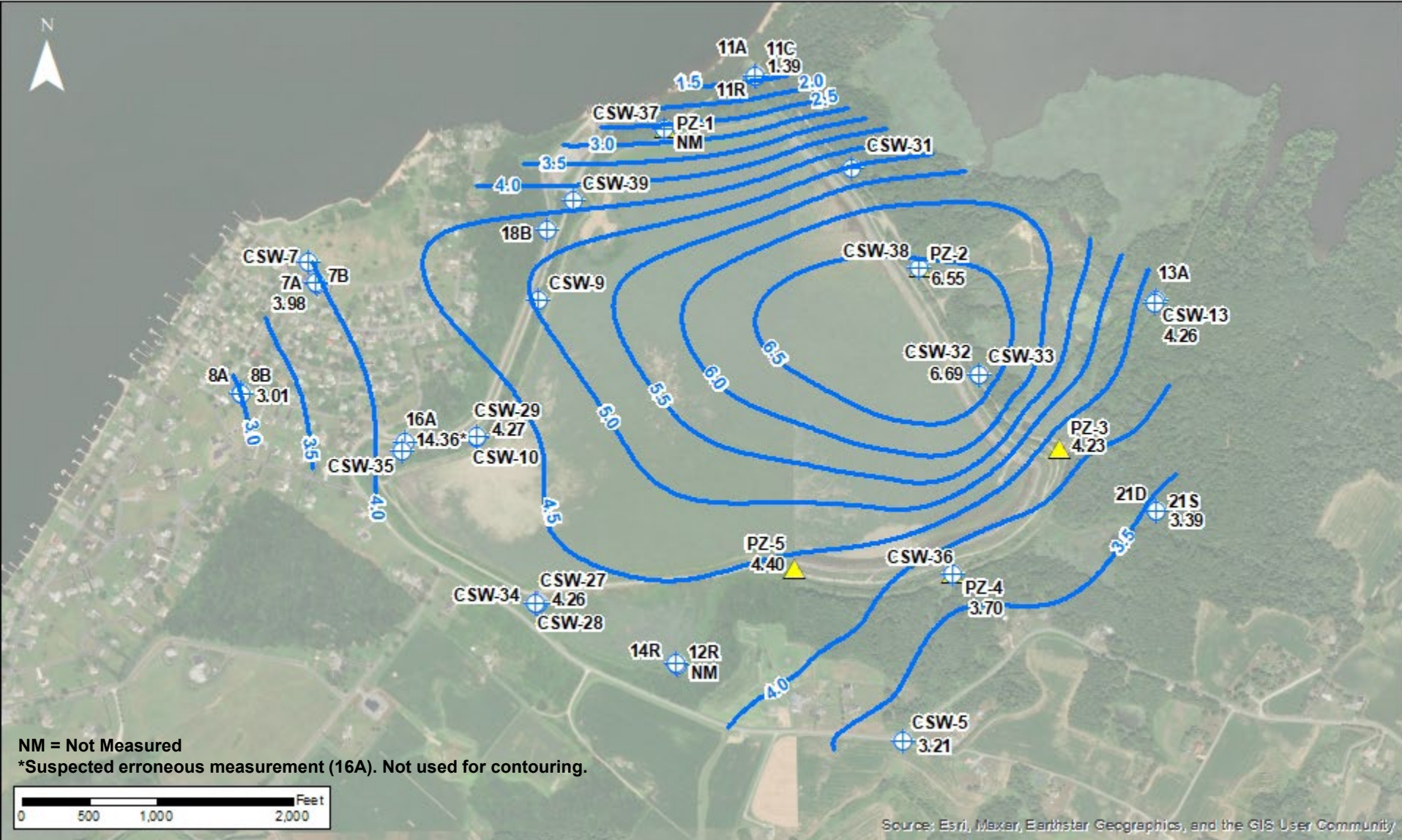
- ⊕ MONITORING WELL WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO SHALLOW AQUIFER WELLS ONLY)
- ▲ PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO SHALLOW AQUIFER WELLS ONLY)
- GROUNDWATER ELEVATION CONTOUR (FT/MSL)



GROUNDWATER ELEVATIONS (UPPER PATAPSCO AQUIFER - DEEP), MAY 15, 2022 2022 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

-  MONITORING WELL WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO DEEP AQUIFER WELLS ONLY)
-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO DEEP AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)



GROUNDWATER ELEVATIONS (MAGOTHY AQUIFER), AUGUST 29, 2022 2022 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

-  MONITORING WELL WITH GROUNDWATER ELEVATION (FT/MSL; MAGOTHY AQUIFER WELLS ONLY)
-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; MAGOTHY AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)





**GROUNDWATER ELEVATIONS (UPPER
PATAPSCO AQUIFER - DEEP),
AUGUST 29, 2022
2022 SUMMARY REPORT**

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

-  MONITORING WELL WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO DEEP AQUIFER WELLS ONLY)
-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO DEEP AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)