

**CCR COMPLIANCE
GROUNDWATER MONITORING AND CORRECTIVE ACTION
ANNUAL REPORT
DUNKIRK LANDFILL**

Prepared for:

Dunkirk Power LLC
Dunkirk Generating Station
Dunkirk, New York

Prepared by:



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1.0 Introduction

Title 40 Code of Federal Regulations (CFR) §257.90 mandates that existing Coal Combustion Residuals (CCR) landfills and surface impoundments, also known as CCR units, be subject to groundwater monitoring and corrective action requirements as further detailed in §257.91 through §257.98. These requirements are part of the overall CCR Rule (or Rule) which was published in the Federal Register on April 17, 2015 and which became effective on October 19, 2015. Specific obligations for Owners and Operators of existing CCR units regarding the preparation of “Annual Groundwater Monitoring and Corrective Action Reports (Annual Report)” are outlined in §257.90(e)(1-5). The first Annual Report was completed on January 31, 2018, and provided information, per the Rule, to address the following aspects for the preceding calendar year:

- Document the status of the groundwater monitoring and corrective action program for the respective CCR units;
- Summarize key actions completed;
- Describe any problems encountered and actions taken to resolve the problems; and
- Offer a projection of key activities for the upcoming year.

At a minimum, the Annual Report must contain the following information to the extent applicable and available:

- A map, aerial image, or diagram showing the CCR unit and all background/upgradient and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program;
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
- In addition to all the monitoring data obtained under §257.90 through §257.98, a summary including the number of groundwater samples that were collected for analysis for each background/upgradient and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
- A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and
- Any other information required to be included as specified in §257.90 through §257.98.

The Dunkirk Generating Station, owned by Dunkirk Power LLC, is a coal-fired power plant located in Dunkirk, New York. The facility was mothballed and ceased electric generating operations in early-2016, subsequent to the effective date of the Rule. The Rule applies to this facility due to the management/disposal of CCR materials resulting from the previous coal combustion activities. Accordingly, the Station's captive disposal site, located in Pomfret, New York and identified as the Dunkirk Landfill, has been designated as an existing CCR unit. This unit has a dedicated groundwater monitoring well network that meets the requirements of §257.91 with regard to number and appropriate locations of wells (certification previously provided under separate cover).

In summary, this third Annual Report has been prepared to comply with the requirements of §257.90(e) with respect to documenting the groundwater monitoring and corrective actions undertaken during Calendar Year 2019 for the Dunkirk Landfill CCR Unit. This Annual Report and all subsequent reports thereto will be placed in the Station's operating record per §257.105(h)(1), noticed to the State Director per §257.106(h)(1), and posted to the publicly accessible internet site per §257.107(h)(1).

The previously prepared second Annual Report (covering the 2018 Calendar Year reporting period) was completed on January 31, 2019 and placed into the facility operating record on this same date. Subsequent notification to the State Director and posting to the publicly accessible website was completed on March 1, 2019.

2.0 Dunkirk Landfill

2.1 Groundwater Monitoring Network

The CCR groundwater monitoring system for the Dunkirk Landfill is comprised of five wells, including Well BR-14-UG (upgradient), and Wells BR-3-DG, BR-12-DG, BR-13-DG, and BR-20-DG (downgradient). The locations of the wells are shown on the attached Figure 1, along with depiction of the generalized groundwater flow direction in the area of the landfill. Each of these wells was already existing, and no new wells were added nor were any existing wells abandoned/replaced during the 2019 reporting period.

2.2 2019 Data Collection

Following its transition in early-2018, the Dunkirk Landfill continued in the CCR Assessment Monitoring Program during the 2019 reporting period. Accordingly, samples were collected and analyzed for Appendix III and Appendix IV constituents as required, including the annual evaluation of the full list of Appendix IV parameters [per §257.95(b)] during the March 2019 monitoring event. Results from all 2019 sampling events are summarized in Tables 1 and 2, covering Appendix III and Appendix IV, respectively. As shown in Table 2, none of the Appendix IV constituents from the 2019 sampling events were measured at concentrations representing a statistically significant level (SSL) above the corresponding site-specific groundwater protection standards. Detected concentrations of certain Appendix IV constituents, as well as several Appendix III constituents; however, do remain above calculated background, and thus providing the basis [per §257.95(f)] for continued Assessment Monitoring into 2020.

2.3 2019 Monitoring Program Transitions

During 2019, there were no transitions between monitoring programs, with the Dunkirk Landfill remaining in the CCR Assessment Monitoring Program.

2.4 2019 Corrective Actions

During 2019, there were no corrective actions undertaken.

2.5 2020 Projected Activities

As noted, it is anticipated that Assessment Monitoring activities will continue for the Dunkirk Landfill during 2020, with continued review of Appendix III/Appendix IV constituent concentrations and comparison against calculated background and established groundwater protection standards.

Tables

Table 1
Dunkirk Power LLC
Dunkirk Landfill--Groundwater Analytical Data
CCR Appendix III Constituents

Monitoring Well	Date Sampled	Total Boron (mg/L)	Total Calcium (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Dissolved Solids (mg/L)	Sulfate (mg/L)	pH (S.U.)
		Calculated Background						
		0.270	135	5.1	0.22	699	254	5.79-8.38
BR-14-UG (Upgradient)	17-Nov-15	0.183	100	3.6	< 0.20	370	82	7.53
	9-Feb-16	0.200	89	3.4	< 0.20	435	78	6.56
	11-May-16	0.164	86	3.1	0.22	430	73	7.24
	30-Aug-16	0.185	87	3.6	< 0.20	470	87	6.98
	9-Nov-16	0.160	92	4.1	< 0.20	575	159	7.33
	14-Feb-17	0.175	108	4.3	< 0.20	480	133	7.17
	16-May-17	0.157	81	3.5	< 0.20	460	91	7.42
	15-Aug-17	0.228	111	3.4	0.21	505	128	6.42
	2-Oct-17	0.154	103	4.0	< 0.20	570	147	7.10
	9-May-18	0.121	80	2.5	< 0.20	385	51	7.29
	9-Oct-18	0.199	81	3.4	0.22	440	78	7.29
	11-Mar-19	0.254	97	3.0	< 0.20	465	62	7.37
	15-May-19	0.170	89	2.9	< 0.20	425	52	7.30
1-Oct-19	0.190	91	3.5	0.23	500	95	7.31	
BR-3-DG (Downgradient)	17-Nov-15	0.098	141	45.9	< 0.20	545	159	7.23
	9-Feb-16	0.078	119	32.8	< 0.20	590	155	7.50
	11-May-16	0.098	111	23.0	< 0.20	560	137	7.16
	30-Aug-16	0.096	114	28.8	< 0.20	585	159	7.01
	9-Nov-16	0.088	115	84.9	< 0.20	705	152	7.13
	14-Feb-17	0.092	151	99.7	< 0.20	590	161	7.19
	16-May-17	0.062	113	58.1	< 0.20	580	150	6.55
	15-Aug-17	0.135	139	69.4	0.27	600	158	6.98
	2-Oct-17	0.095	134	77.4	0.38	700	165	7.32
	9-May-18	0.068	145	34.9	< 0.20	585	147	7.12
	8-Oct-18	0.109	106	33.5	0.22	565	155	7.24
	11-Mar-19	0.097	157	24.3	< 0.20	600	166	7.48
	15-May-19	0.125	125	19.0	< 0.20	500	153	7.03
1-Oct-19	0.150	140	26.2	0.25	635	153	6.99	
BR-12-DG (Downgradient)	17-Nov-15	0.163	197	319	< 0.20	825	66	6.94
	9-Feb-16	0.104	177	263	< 0.20	920	151	7.00
	11-May-16	0.083	156	158	< 0.20	780	168	7.29
	30-Aug-16	0.173	166	329	< 0.20	1040	70	7.04
	9-Nov-16	0.179	222	375	< 0.20	1260	62	7.00
	14-Feb-17	0.117	241	422	< 0.20	1030	109	7.07
	16-May-17	0.068	160	299	< 0.20	1100	139	6.54
	15-Aug-17	0.181	174	299	< 0.20	1030	83	6.99
	2-Oct-17	0.163	196	421	1.04	1250	70	6.94
	9-May-18	0.061	205	260	< 0.20	950	147	6.69
	8-Oct-18	0.169	171	382	< 0.20	1120	71	6.91
	11-Mar-19	0.073	244	213	< 0.20	920	154	7.16
	15-May-19	0.066	175	188	< 0.20	945	156	6.91
1-Oct-19	0.142	241	323	0.29	1340	85	6.91	
BR-13-DG (Downgradient)	17-Nov-15	0.223	109	8.8	< 0.20	495	67	7.23
	9-Feb-16	0.162	109	7.9	< 0.20	560	129	7.25
	11-May-16	0.151	115	7.1	< 0.20	620	161	7.23
	30-Aug-16	0.304	118	8.6	< 0.20	560	59	7.09
	9-Nov-16	0.164	85	7.3	< 0.20	560	127	7.20
	14-Feb-17	0.144	113	7.6	< 0.20	545	140	7.21
	16-May-17	0.103	97	7.1	< 0.20	585	142	6.79
	15-Aug-17	0.274	103	8.4	0.21	500	60	7.03
	2-Oct-17	0.240	96	8.4	< 0.20	565	41	7.19
	9-May-18	0.109	131	6.7	< 0.20	540	108	7.05
	8-Oct-18	0.252	89	8.9	< 0.20	555	72	7.09
	11-Mar-19	0.172	126	8.2	< 0.20	545	122	7.07
	15-May-19	0.134	123	7.8	< 0.20	585	137	7.11
1-Oct-19	0.278	94	8.7	0.26	615	29	7.13	
BR-20-DG (Downgradient)	17-Nov-15	1.42	26	2.8	< 0.20	670	102	7.61
	9-Feb-16	1.40	24	12.2	0.35	725	< 2.0	7.74
	11-May-16	1.44	22	33.0	0.35	720	< 2.0	7.85
	30-Aug-16	1.39	24	25.4	0.36	685	< 4.0	6.97
	9-Nov-16	1.35	19	15.5	0.22	675	< 2.0	7.69
	14-Feb-17	1.56	25	16.5	0.39	635	< 2.0	7.69
	16-May-17	1.37	21	15.5	< 0.20	675	< 2.0	7.71
	15-Aug-17	1.42	25	38.3	0.41	655	< 2.0	7.58
	2-Oct-17	1.24	22	21.6	0.42	720	< 4.0	7.32
	9-May-18	1.09	21	21.3	0.40	650	< 4.0	7.49
	8-Oct-18	1.41	21	14.9	0.39	640	< 2.0	7.58
	12-Mar-19	1.35	22	19.8	0.42	725	< 4.0	7.54
	15-May-19	1.27	24	23.7	0.33	765	< 4.0	7.71
1-Oct-19	1.45	22	17.7	0.42	575	< 4.0	7.73	

Notes:

- Cells with "<" are represented as non-detects. Values shown correspond to the laboratory reporting limit.
- Background values based on statistical evaluation of initial eight rounds (Nov. 2015 thru Aug. 2017) of groundwater sampling data for Well BR-14-UG.

**Table 2
Dunkirk Power LLC
Dunkirk Landfill--Groundwater Analytical Data
CCR Appendix IV Constituents**

Monitoring Well	Date Sampled	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Cadmium (mg/L)	Total Chromium (mg/L)	Total Cobalt (mg/L)	Total Fluoride (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Selenium (mg/L)	Total Thallium (mg/L)	Total Radium-226 and 228 (pCi/L)
		Calculated Background														
		0.0025	0.009	0.68	0.004	0.005	0.005	0.05	0.22	0.005	0.05	0.000001	0.01	0.005	0.0007	1.25
		Groundwater Protection Standard														
		MCL	MCL	MCL	Background	MCL	MCL	Background	MCL	RSL	Background	MCL	RSL	MCL	MCL	MCL
0.006	0.01	2	0.004	0.005	0.1	0.05	4.0	0.015	0.05	0.002	0.10	0.05	0.002	5		
BR-14-UG (Upgradient)	17-Nov-15	< 0.060	< 0.009	0.21	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.23
	9-Feb-16	< 0.060	< 0.005	0.33	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.24
	11-May-16	< 0.060	< 0.005	0.20	< 0.005	< 0.005	< 0.005	< 0.050	0.22	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.18
	30-Aug-16	< 0.060	0.008	0.24	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	0.000005	< 0.010	< 0.005	< 0.010	1.25
	9-Nov-16	< 0.060	< 0.005	0.05	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.23
	14-Feb-17	< 0.060	< 0.005	0.09	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.22
	16-May-17	0.0010	< 0.005	0.11	< 0.004	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0007	0.33
	15-Aug-17	0.0025	< 0.005	0.10	< 0.004	< 0.005	< 0.005	< 0.050	0.21	< 0.005	< 0.050	< 0.000010	< 0.010	< 0.005	< 0.0007	< 1.22
	29-Mar-18	< 0.0004	< 0.005	0.13	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0003	0.00
	9-May-18	Not Analyzed	Not Analyzed	0.12	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.29
	9-Oct-18	Not Analyzed	Not Analyzed	0.14	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.22	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.29
	11-Mar-19	< 0.0004	0.005	0.20	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0003	0.63
15-May-19	Not Analyzed	< 0.01	0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	< 0.003	Not Analyzed	0.000016	Not Analyzed	Not Analyzed	Not Analyzed	0.77	
1-Oct-19	Not Analyzed	< 0.005	0.12	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.23	< 0.005	Not Analyzed	0.000007	Not Analyzed	Not Analyzed	Not Analyzed	0.43	
BR-3-DG (Downgradient)	17-Nov-15	< 0.060	0.008	0.05	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	0.006	< 0.050	< 0.000005	< 0.010	< 0.005	0.012	0.22
	9-Feb-16	< 0.060	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.22
	11-May-16	< 0.060	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.76
	30-Aug-16	< 0.060	0.008	0.04	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	1.23
	9-Nov-16	< 0.060	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.28
	14-Feb-17	< 0.060	0.006	0.04	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.31
	16-May-17	0.0016	< 0.005	0.03	< 0.004	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0007	1.28
	15-Aug-17	0.0040	< 0.005	0.05	< 0.004	< 0.005	< 0.005	< 0.050	0.27	< 0.005	< 0.050	< 0.000010	< 0.010	< 0.005	< 0.0007	1.23
	29-Mar-18	< 0.0004	< 0.005	0.04	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0003	0.00
	9-May-18	Not Analyzed	Not Analyzed	0.03	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.20
	8-Oct-18	Not Analyzed	Not Analyzed	0.03	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.22	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.58
	11-Mar-19	< 0.0004	< 0.005	0.03	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	0.006	< 0.050	0.000030	< 0.010	< 0.005	< 0.0003	0.54
15-May-19	Not Analyzed	< 0.01	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	< 0.003	Not Analyzed	0.000028	Not Analyzed	Not Analyzed	Not Analyzed	3.48	
1-Oct-19	Not Analyzed	< 0.005	0.04	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.25	< 0.005	Not Analyzed	0.000016	Not Analyzed	Not Analyzed	Not Analyzed	0.81	
BR-12-DG (Downgradient)	17-Nov-15	< 0.060	0.006	0.07	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	0.014	0.35
	9-Feb-16	< 0.060	< 0.005	0.06	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.16
	11-May-16	< 0.060	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.31
	30-Aug-16	< 0.060	0.009	0.09	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	1.61
	9-Nov-16	< 0.060	< 0.005	0.08	< 0.005	< 0.005	0.045	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	0.45
	14-Feb-17	< 0.060	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.010	1.22
	16-May-17	0.0022	< 0.005	0.04	< 0.004	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0007	0.22
	15-Aug-17	0.0045	< 0.005	0.08	< 0.004	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000010	< 0.010	< 0.005	< 0.0007	0.32
	29-Mar-18	< 0.0004	< 0.005	0.05	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0003	0.00
	9-May-18	Not Analyzed	Not Analyzed	0.04	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.32
	8-Oct-18	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.67
	11-Mar-19	< 0.0004	< 0.005	0.03	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.000005	< 0.010	< 0.005	< 0.0003	1.16
15-May-19	Not Analyzed	< 0.01	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	< 0.003	Not Analyzed	< 0.000005	Not Analyzed	Not Analyzed	Not Analyzed	1.49	
1-Oct-19	Not Analyzed	< 0.005	0.06	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.29	< 0.005	Not Analyzed	< 0.000005	Not Analyzed	Not Analyzed	Not Analyzed	0.89	

**Table 2
Dunkirk Power LLC
Dunkirk Landfill--Groundwater Analytical Data
CCR Appendix IV Constituents**

Monitoring Well	Date Sampled	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Cadmium (mg/L)	Total Chromium (mg/L)	Total Cobalt (mg/L)	Total Fluoride (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Selenium (mg/L)	Total Thallium (mg/L)	Total Radium-226 and 228 (pCi/L)	
		Calculated Background															
		0.0025	0.009	0.68	0.004	0.005	0.005	0.05	0.22	0.005	0.05	0.000001	0.01	0.005	0.0007	1.25	
		Groundwater Protection Standard															
		MCL	MCL	MCL	Background	MCL	MCL	Background	MCL	RSL	Background	MCL	RSL	MCL	MCL	MCL	
0.006	0.01	2	0.004	0.005	0.1	0.05	4.0	0.015	0.05	0.002	0.10	0.05	0.002	5			
BR-13-DG (Downgradient)	17-Nov-15	< 0.060	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.012	0.36	
	9-Feb-16	< 0.060	< 0.005	0.08	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	0.45	
	11-May-16	< 0.060	< 0.005	0.07	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	0.44	
	30-Aug-16	< 0.060	0.008	0.11	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	1.39	
	9-Nov-16	< 0.060	< 0.005	0.05	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	0.33	
	14-Feb-17	< 0.060	< 0.005	0.06	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	0.17	
	16-May-17	0.0015	< 0.005	0.05	< 0.004	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.0007	0.24	
	15-Aug-17	0.0030	< 0.005	0.09	< 0.004	< 0.005	< 0.005	< 0.050	0.21	< 0.005	< 0.050	< 0.0000010	< 0.010	< 0.005	< 0.0007	0.34	
	29-Mar-18	< 0.0004	< 0.005	0.07	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.0003	0.00	
	9-May-18	Not Analyzed	Not Analyzed	0.06	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.37
	8-Oct-18	Not Analyzed	Not Analyzed	0.09	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.87
	11-Mar-19	< 0.0004	0.006	0.07	< 0.0003	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.0003	1.12	
15-May-19	Not Analyzed	< 0.01	< 0.20	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.20	< 0.003	Not Analyzed	< 0.0000005	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.09	
1-Oct-19	Not Analyzed	< 0.005	0.09	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.26	< 0.005	Not Analyzed	< 0.0000005	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.13	
BR-20-DG (Downgradient)	17-Nov-15	< 0.060	0.006	1.50	< 0.005	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	1.53	
	9-Feb-16	< 0.060	< 0.005	1.83	< 0.005	< 0.005	< 0.005	< 0.050	0.35	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	1.71	
	11-May-16	< 0.060	< 0.005	1.57	< 0.005	< 0.005	0.006	< 0.050	0.35	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	2.13	
	30-Aug-16	< 0.060	0.006	1.93	< 0.005	< 0.005	< 0.005	< 0.050	0.36	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	2.04	
	9-Nov-16	< 0.060	< 0.005	1.25	< 0.005	< 0.005	< 0.005	< 0.050	0.22	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	0.61	
	14-Feb-17	< 0.060	< 0.005	1.88	< 0.005	< 0.005	< 0.005	< 0.050	0.39	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.010	2.20	
	16-May-17	0.0014	< 0.005	1.53	< 0.004	< 0.005	< 0.005	< 0.050	< 0.20	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.0007	0.99	
	15-Aug-17	0.0016	< 0.005	1.84	< 0.004	< 0.005	< 0.005	< 0.050	0.41	< 0.005	< 0.050	< 0.0000010	< 0.010	< 0.005	< 0.0007	0.77	
	29-Mar-18	< 0.0004	< 0.005	2.00	< 0.0003	< 0.005	< 0.005	< 0.050	0.36	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.0003	2.01	
	9-May-18	Not Analyzed	Not Analyzed	1.51	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.40	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	2.02
	8-Oct-18	Not Analyzed	Not Analyzed	1.58	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.39	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.87
	12-Mar-19	< 0.0004	< 0.005	1.51	< 0.0003	< 0.005	< 0.005	< 0.050	0.42	< 0.005	< 0.050	< 0.0000005	< 0.010	< 0.005	< 0.0003	1.24	
15-May-19	Not Analyzed	< 0.01	1.60	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.33	< 0.003	Not Analyzed	0.0000008	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.89	
1-Oct-19	Not Analyzed	< 0.005	1.38	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.42	< 0.005	Not Analyzed	0.0000008	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.22	

= Result from April 10, 2019 re-analysis; prior result from March 11, 2019 sample considered an atypical value (0.339 mg/L). April 2019 re-analysis result (< 0.050 mg/L) deemed representative and consistent with historical values for this well.

Notes:

1. Cells with "<" are represented as non-detects. Values shown correspond to the laboratory reporting limit.
2. Background values based on statistical evaluation of initial eight rounds (Nov. 2015 thru Aug. 2017) of groundwater sampling data for Well BR-14-UG.
3. As indicated, Groundwater Protection Standards are either published MCLs or risk-based Regional Screening Levels (RSLs). For constituents where calculated background exceeds either the MCL or RSL, the background value is used.




Figures

OFFICE DATE DESIGNED BY DRAWN BY CHECKED BY APPROVED BY DRAWING NUMBER
 Pittsburgh, PA 1/8/20
 631229736-B4

File: O:\PROJECT\NRC_DUNKIRK\631229736-B4.dwg
 Plot Date/Time: Jan 08, 2020 - 1:37pm
 Xref: photo_3.jpg
 Image: PHOTO.jpg



LEGEND:

-  BR-20-DG (611.59) CCR GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED ON OCTOBER 1, 2019
-  ACTIVE AREAS
-  GROUNDWATER FLOW DIRECTION

REFERENCE:
 GOOGLE AERIAL PHOTOGRAPH, DATED 10/2016.



	500 Penn Center Boulevard, Suite 1000 Pittsburgh, Pennsylvania 15235
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DUNKIRK POWER LLC

FIGURE 1
 CCR COMPLIANCE GROUNDWATER MONITORING WELL LOCATION MAP
 DUNKIRK LANDFILL
 DUNKIRK GENERATING STATION
 DUNKIRK, NEW YORK