CCR COMPLIANCE
GROUNDWATER MONITORING AND CORRECTIVE ACTION
ANNUAL REPORT
ASH FILTER PONDS AND ASH/REFUSE DISPOSAL SITE

Prepared for:

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Conemaugh Generating Station
New Florence, Pennsylvania

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January 2021

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Executive Summary

In response to the newly adopted Part A elements (effective September 28, 2020) of the Coal Combustion Residuals (CCR) Rule (or Rule), this Executive Summary has been incorporated into the annual report per the specific provisions as codified in 40 CFR §257.90(e)(6). These provisions require that an up-front overview of the current status (covering the immediately preceding calendar year) of groundwater monitoring and corrective action programs be provided in a concise and focused manner for each CCR unit at the facility. Accordingly, the following paragraphs document the respective groundwater monitoring status (for Calendar Year 2020) of the Ash Filter Ponds and the Ash Disposal Site at the Keystone-Conemaugh Projects, LLC – Conemaugh Generating Station. Tables and/or figures referenced in the discussions below are included at the end of the report and further support the text (Sections 2.0 and 3.0) in the main body of the report.

The Ash Filter Ponds represent a collective CCR unit, and encompasses four ponds designated as Ponds "A," "B,", "C," and "D" (see Figure 1). Also as shown on Figure 1, the associated CCR groundwater monitoring network is comprised of five wells, including two upgradient locations (Wells MW-1B and MW-2) and three downgradient locations (Wells MW-3, MW-4, and MW-23). For Calendar Year 2020, the Ash Filter Ponds entered and ended the period in the Detection Monitoring Program, wherein they have remained since CCR groundwater monitoring activities were initiated. To support this continuation, an Alternate Source Demonstration (ASD) was completed in April 2018, which successfully showed that incidental deposition of gypsum in the area of Well MW-4 was responsible for the statistically significant increase (SSI) in sulfate (CCR Appendix III constituent) in the localized groundwater (see Table 1). The findings and conclusions from the April 2018 ASD remain relevant and applicable to the current groundwater monitoring observations, which continue to show sulfate as the only Appendix III constituent elevated above background and only in downgradient Well MW-4 (see Table 1). No groundwater activities to date have triggered the Ash Filter Ponds into the Assessment Monitoring Program, and correspondingly, there has never been basis for performance of an Assessment of Corrective Measures.

As shown in Figure 2, the Ash Disposal Site is a captive landfill located in the northern portion of the Conemaugh Generating Station proper, and includes a CCR groundwater monitoring network consisting of four wells, including one upgradient location (Well MW-31) and three downgradient locations (Wells MW-9, MW-10, and MW-11). For Calendar Year 2020, the Ash Disposal Site entered and ended the period in the Assessment Monitoring Program. The Ash Disposal Site has remained in Assessment Monitoring since being transitioned in January 2018 following confirmed SSIs for CCR Appendix III constituents, including calcium, chloride, sulfate, and total dissolved solids (TDS) in the downgradient wells (see Table 3). Assessment Monitoring events conducted in January, May, and October 2020 (see Table 4) did not reveal any CCR Appendix IV constituents

at concentrations representing a statistically significant level (SSL) above the corresponding groundwater protection standards (GWPSs). These events further continued to show several Appendix III constituents at values above background in the downgradient wells, including Wells MW-9 and MW-10 (calcium, chloride, pH, sulfate, and TDS), and Well MW-11 (calcium, chloride, fluoride, sulfate, and TDS). No groundwater-related findings to date have triggered the Ash Disposal Site into an Assessment of Corrective Measures. A surficial (non-groundwater) release of CCR materials (ash) did occur at the Ash Disposal Site in August 2018 and was immediately addressed via appropriate response actions. These actions and the associated Assessment of Corrective Measures were documented in a report issued in January 2019, and which also encompassed a public meeting that was held on December 18, 2018.

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 of these Annual Reports was completed no later than January 31, 2018, and provided information 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, and beginning with the current report, must also address the items contained in §257.90(e)(6) in the form of an Executive Summary:

- 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.

Keystone-Conemaugh Projects, LLC – Conemaugh Generating Station, is an electric generating station located in New Florence, Pennsylvania. The Station operates two coal-fired boilers each with a steam turbine-driven electric generator that provides electricity to the regional electric grid. The Rule applies to this facility due to the management/disposal of CCR materials that are generated from the combustion of coal. CCR units associated with Station operations include the Conemaugh Ash/Refuse Disposal Site and four Ash Filter Ponds (Ponds "A," "B," "C," and "D") used for the management of bottom ash. Each of these CCR units has a dedicated groundwater monitoring system that was originally installed to comply with Commonwealth of Pennsylvania Residual Waste Regulations, and was subsequently evaluated and modified (as needed) for use under the CCR program. Additionally, in accordance with the provisions of §257.91(d) of the Rule, the groundwater monitoring system for the Ash Filter Ponds has been designated to provide coverage in the context of a multiunit system encompassing all four ponds collectively.

In summary, this fourth Annual Report has been prepared to comply with the requirements of §257.90(e), addressing each of the Station's CCR units with respect to the groundwater monitoring and corrective actions undertaken during Calendar Year 2020. 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).

2.0 Ash Filter Ponds

2.1 Groundwater Monitoring Network

The CCR groundwater monitoring system for the Ash Filter Ponds is comprised of five wells, including Wells MW-1B and MW-2 (upgradient), and Wells MW-3, MW-4, and MW-23 (downgradient). All five wells communicate with the alluvium, which is the uppermost aquifer. The locations of the groundwater monitoring wells are shown on Figure 1, along with depiction of the generalized groundwater flow direction in the area of the ponds. Each of these wells was already existing, and no new wells were added nor were any existing wells abandoned/replaced during the 2020 reporting period.

2.2 Summary of Previously-Reported Monitoring Activities

In accordance with the Detection Monitoring requirements under §257.94(b) for existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well were collected and analyzed for the constituents listed in Appendices III and IV of the Rule prior to October 17, 2017. The results from these samples, which were collected during the period from December 2015 through July 2017, were presented in the first Annual Report issued in January 2018. In addition, a ninth round of samples was collected (October 1-4, 2017) and analyzed for Appendix III constituents only. The results from these samples served as the initial point of comparison to determine if concentrations in any of the downgradient wells were at levels representing a statistically significant increase (SSI) over the background concentrations established in the upgradient well(s).

During January 2018, the results from the October 1-4, 2017 Detection Monitoring event were reviewed, and subsequent determination made that one downgradient well (MW-4) showed an Appendix III constituent (sulfate) at levels representing an SSI above corresponding background concentrations. Accordingly, and per the provisions of §257.94(e)(2), efforts were undertaken to conduct an Alternate Source Demonstration (ASD) in an attempt to identify a potential source other than the Ash Filter Ponds which was responsible for the observed SSI. This ASD (April 2018) was ultimately successful and determined that incidental gypsum deposition in the area of Well MW-4 was causing the elevated sulfate readings in the localized groundwater. As a result, the Ash Filter Ponds were deemed to remain in the CCR Detection Monitoring Program, and were additionally sampled in May 2018 and October 2018 with continuing observations of SSIs only for sulfate in Well MW-4. These results, along with the detailed findings and conclusions from the ASD, were presented in the second Annual Report issued in January 2019.

During the 2019 reporting period, the Ash Filter Ponds remained in the Detection Monitoring Program, with sampling events conducted in April, July, and October. The results from each of

the 2019 events consistently showed SSIs for sulfate in downgradient Well MW-4 only, along with an SSI for calcium in this same well during the October event. With both calcium and sulfate being the principal components of gypsum, the previously completed ASD was deemed as still relevant and applicable, allowing the Ash Filter Ponds to continue in the CCR Detection Monitoring Program. The results and accompanying discussion were presented in the third Annual Report issued in January 2020.

2.3 2020 Data Collection

The Ash Filter Ponds remained in the CCR Detection Monitoring Program during the 2020 reporting period, and were subjected to sampling for Appendix III constituents as part of monitoring events conducted in May and October 2020 (the required monitoring frequency "shall be at least semiannual" for the Appendix III constituents). As shown in Table 1, the results from each of the 2020 events again consistently showed SSIs for sulfate only in downgradient Well MW-4. Consequently, based on review of the collective 2020 analytical data and continued relevance/applicability of the previously completed ASD, the Ash Filter Ponds will remain in the CCR Detection Monitoring Program in Calendar Year 2021.

As an additional note, downgradient Well MW-3 was re-surveyed in January 2020 and the top of casing elevation (from which depth to groundwater is recorded) was adjusted upward by 4.25 feet. This adjustment has been appropriately applied to all the previously calculated groundwater elevation values for Well MW-3 contained in Table 1, and results in a more uniform depiction of the local groundwater table but does not alter the generalized flow directions.

2.4 2020 Monitoring Program Transitions

During 2020, there were no transitions between monitoring programs, with the Ash Filter Ponds remaining in the CCR Detection Monitoring Program.

2.5 2020 Corrective Actions

During 2020, there were no problems identified or corrective actions undertaken.

2.6 2021 Projected Activities

As noted, it is anticipated that Detection Monitoring activities will continue for the Ash Filter Ponds during 2021, with continued review of Appendix III constituent concentrations and comparison with the calculated background values.

3.0 Ash Disposal Site

3.1 Groundwater Monitoring Network

The CCR groundwater monitoring system for the Ash Disposal Site is comprised of four wells, including Well MW-31 (upgradient) and Wells MW-9, MW-10, and MW-11 (downgradient). Monitoring Wells MW-9 and MW-11 communicate with the shallow unconfined groundwater in bedrock and Monitoring Wells MW-10 and MW-31 communicate with shallow groundwater across the soil/bedrock interface. Hence, all four wells monitor the uppermost aquifer in the area of the Ash Disposal Site. The locations of the groundwater monitoring wells are shown on Figure 2, along with depiction of the generalized groundwater flow direction in the area of the disposal site. Each of these wells was already existing, and no new wells were added nor were any existing wells abandoned/replaced during the 2020 reporting period.

3.2 Summary of Previously-Reported Monitoring Activities

In accordance with the Detection Monitoring requirements under §257.94(b) for existing CCR landfills, a minimum of eight independent samples from each background and downgradient well were collected and analyzed for the constituents listed in Appendices III and IV of the Rule prior to October 17, 2017. The results from these samples, which were collected during the period from December 2015 through July 2017, were presented in the first Annual Report issued in January 2018. In addition, a ninth round of samples was collected (October 2-3, 2017) and analyzed for Appendix III constituents only. The results from these samples served as the initial point of comparison to determine if concentrations in any of the downgradient wells were at levels representing an SSI over the background concentrations established in the upgradient well(s).

During January 2018, the results from the October 2017 Detection Monitoring event were reviewed, and subsequent determination made that all three downgradient wells showed several Appendix III constituents at levels representing an SSI above corresponding background concentrations. Accordingly, the Ash Disposal Site was transitioned into the CCR Assessment Monitoring Program, and an initial round of samples covering all Appendix IV constituents was collected in March 2018 per §257.95(b). From these results, the detected Appendix IV constituents were carried forward and analyzed during continued Assessment Monitoring events conducted in May 2018 and October 2018. As was observed, none of the Appendix IV constituents from any of the 2018 sampling events were measured at concentrations representing a statistically significant level (SSL) above the corresponding site-specific groundwater protection standards (GWPSs). All analytical results from the 2018 Assessment Monitoring were presented in the second Annual Report issued in January 2019.

It is additionally noted that the May 2018 Assessment Monitoring event yielded an erroneous result for Radium-226/228 in downgradient Well MW-9. The initially reported value (103.6 pCi/L) was generated via an incorrect laboratory analytical method. Following this determination, a new sample (for Radium analysis only) was collected from MW-9 in July 2018 and reanalyzed using the correct analytical method. The revised result (0.32 pCi/L) from the July 2018 sampling aligns with the historical values detected in this well, and correspondingly remains below background and the groundwater protection standard.

During the 2019 reporting period, the Ash Disposal Site remained in the CCR Assessment Monitoring Program, with sampling events conducted in April, July, and October 2019. None of these events showed any Appendix IV constituents at levels representing an SSL above the corresponding GWPSs. However, with detections of at least one Appendix IV constituent and several Appendix III constituents above calculated background, the Ash Disposal Site was deemed to remain in the CCR Assessment Monitoring Program. All analytical results from the 2019 Assessment Monitoring were presented in the third Annual Report issued in January 2020.

3.3 2020 Data Collection

Following its transition in early-2018, the Ash Disposal Site continued in the CCR Assessment Monitoring Program during the 2020 reporting period. Accordingly, samples were collected and analyzed for Appendix III and Appendix IV constituents as required, during the January, May, and October 2020 monitoring events (similar to the monitoring frequency for the Appendix III constituents, the required monitoring frequency is "on at least a semiannual basis" for the Appendix IV constituents following completion of the initial sampling event for the Assessment Monitoring Program). Results from the 2020 sampling events are summarized in Tables 3 and 4, covering Appendix III and Appendix IV, respectively. As shown in Table 4, none of the Appendix IV constituents from the 2020 sampling events were measured at concentrations representing an SSL above the corresponding GWPSs. Detected concentrations of two Appendix IV constituents (barium and fluoride) as well as several Appendix III constituents; however, do remain above calculated background, and thus providing the basis for continued Assessment Monitoring into 2021.

3.4 2020 Monitoring Program Transitions

During 2020, there were no transitions between monitoring programs, with the Ash Disposal Site remaining in the CCR Assessment Monitoring Program.

3.5 2020 Corrective Actions

During 2020, there were no problems identified or corrective actions undertaken.

3.6 2021 Projected Activities

As noted, it is anticipated that Assessment Monitoring activities will continue for the Ash Disposal Site during 2021, with continued review of Appendix III/Appendix IV constituent concentrations and comparison against calculated background and established groundwater protection standards.

Tables

Table 1
Conemaugh Generating Station
Ash Filter Ponds – Groundwater Analytical Data
CCR Appendix III Constituents

Monitoring Well	Date Sampled	Groundwater Elevation (ft. MSL)	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						
			0.58	376	1560	0.20	6975	788	4.59-7.42
MW-1B (Upgradient)	17-Dec-15	1070.99	0.29	333	1540	< 0.1	3620	544	5.49
	27-Jan-16	1071.19	0.31	288	1280	< 0.1	3180	583	5.87
	20-Apr-16	1071.69	0.28	170	652	< 0.5	2410	729	6.09
	19-Jul-16	1071.69	0.36	208	1310	0.1	2760	575	5.79
	11-Oct-16	1072.99	0.46	192	1010	0.2	2640	438	6.56
	17-Jan-17	1072.54	0.43	198	1030	< 0.1	2650	427	5.87
	24-Apr-17	1072.69	0.37	166	988	< 0.1	2470	548	5.27
	20-Jul-17	1072.04	0.39	345	1560	< 0.1	3740	388	5.00
	1-Oct-17	1070.84	0.36	430	2040	< 0.1	4930	427	5.68
	22-May-18	1074.94	0.39	120	640	< 0.1	1680	364	5.91
	18-Oct-18	1074.69	0.89	53	288	3.1	1340	543	7.56
	17-Apr-19	1073.69	0.47	122	467	0.3	1300	369	6.00
	18-Jul-19	1073.79	0.44	155	638	< 0.1	1630	303	5.60
	3-Oct-19	1072.49	0.45	190	848	< 0.1	1930	300	5.33
	15-May-20	1073.92	0.42	218	1170	< 0.1	2510	353	5.41
	23-Oct-20	1072.62	0.39	177	973	< 0.1	2220	414	5.66
MW-2 (Upgradient)	11-Oct-16	1072.72	0.30	191	251	< 0.1	1200	348	6.28
	16-Nov-16	1072.42	0.31	176	94	0.1	868	416	6.95
	21-Dec-16	1073.02	0.41	176	101	0.2	1050	519	7.03
	25-Jan-17	1073.72	0.21	137	68	0.2	726	316	6.93
	21-Mar-17	1073.82	0.33	158	75	0.1	828	387	6.40
	25-Apr-17	1072.92	0.29	136	69	< 0.1	792	373	6.28
	13-Jun-17	1073.02	0.30	150	60	< 0.1	768	369	6.15
	27-Jul-17	1072.57	0.28	133	67	< 0.1	684	310	6.45
	4-Oct-17	1071.17	0.32	138	58	< 0.1	768	330	6.80
	29-May-18	1075.57	0.10	98	22	0.4	606	185	7.10
	23-Oct-18	1075.37	0.18	105	21	0.4	550	192	6.97
	15-Apr-19	1074.12	0.15	99	21	0.4	508	169	7.13
	30-Jul-19	1074.47	0.15	101	19	0.3	572	194	6.80
	9-Oct-19	1072.62	0.26	116	54	0.1	564	304	6.19
	15-May-20	1073.61	0.16	104	18	0.3	534	224	6.27
	23-Oct-20	1072.73	0.28	127	87	0.2	644	345	6.24
MW-3 (Downgradient)	16-Dec-15	1069.49	< 0.05	123	363	< 0.1	882	227	5.74
	26-Jan-16	1070.14	< 0.05	132	392	< 0.1	970	250	5.94
	25-Apr-16	1070.39	< 0.05	203	505	< 0.1	1460	288	6.52
	25-Jul-16	1069.24	< 0.05	115	343	< 0.1	972	225	5.72
	24-Oct-16	1070.44	< 0.05	123	304	< 0.1	902	211	6.01
	17-Jan-17	1071.19	< 0.05	113	370	< 0.1	976	245	5.95
	25-Apr-17	1071.34	< 0.05	181	552	< 0.1	1740	314	5.57
	25-Jul-17	1070.24	< 0.05	151	389	< 0.1	1270	256	5.47
	1-Oct-17	1069.14	< 0.05	135	387	< 0.1	1140	255	6.30
	23-May-18	1072.04	< 0.05	175	455	< 0.1	1330	276	6.07
	23-Oct-18	1072.54	< 0.05	152	440	< 0.1	1150	293	5.75
	22-Apr-19	1071.34	< 0.05	181	553	< 0.1	1440	353	5.97
	30-Jul-19	1071.84	< 0.05	170	497	< 0.1	1720	291	5.66
	21-Oct-19	1070.54	< 0.05	143	432	< 0.1	1110	261	5.54
	13-May-20	1072.22	< 0.05	155	464	< 0.1	1320	354	5.98
	23-Oct-20	1070.26	< 0.05	122	397	< 0.1	1070	220	5.72
MW-4 (Downgradient)	21-Dec-15	1069.53	0.15	301	643	< 0.1	2470	874	5.77
	4-Feb-16	1069.73	0.13	316	654	< 0.1	2580	870	5.83
	26-Apr-16	1070.08	0.13	426	932	< 0.1	3390	965	6.19
	25-Jul-16	1068.98	0.12	346	874	< 0.1	3120	1090	5.82
	26-Oct-16	1070.08	0.17	310	670	< 0.1	2530	865	6.27
	30-Jan-17	1070.88	0.15	301	736	< 0.1	2740	895	6.12
	26-Apr-17	1070.93	0.14	392	863	< 0.1	3310	996	6.68
	27-Jul-17	1070.23	0.19	403	977	< 0.1	3350	1170	5.63
	4-Oct-17	1068.83	0.14	335	814	< 0.2	3200	1050	6.02
	29-May-18	1070.53	0.13	345	842	< 0.1	3280	1010	5.96
	24-Oct-18	1071.93	0.14	290	589	< 0.1	2550	927	5.99
	22-Apr-19	1070.88	0.10	316	800	< 0.1	2470	892	5.98
	31-Jul-19	1071.03	0.12	292	650	< 0.1	2430	854	5.62
	21-Oct-19	1070.33	0.16	401	831	< 0.1	3030	1150	5.80
	13-May-20	1071.57	0.12	306	644	< 0.1	2480	987	6.46
	23-Oct-20	1069.91	0.14	296	560	< 0.1	2320	980	6.14
MW-23 (Downgradient)	20-Dec-15	1068.03	< 0.05	182	388	< 0.1	1580	653	5.59
	2-Feb-16	1069.08	< 0.05	176	344	< 0.1	1520	576	5.98
	25-Apr-16	1069.38	< 0.05	175	329	< 0.1	1540	557	5.16
	21-Jul-16	1067.93	0.34	173	371	< 0.1	1600	591	5.63
	24-Oct-16	1068.83	< 0.05	173	327	< 0.1	1540	509	6.14
	18-Jan-17	1070.13	0.11	165	368	< 0.1	1550	543	5.79
	24-Apr-17	1069.68	< 0.05	164	383	< 0.1	1520	558	5.21
	24-Jul-17	1069.18	< 0.05	183	378	< 0.1	1530	532	5.15
	1-Oct-17	1067.98	< 0.05	172	313	< 0.1	1520	575	6.25
	22-May-18	1071.18	< 0.05	181	347	< 0.1	1460	507	5.63
	22-Oct-18	1071.13	< 0.05	165	355	< 0.1	1450	538	5.70
	17-Apr-19	1070.28	< 0.05	153	346	< 0.1	1320	527	5.52
	18-Jul-19	1070.73	< 0.05	164	309	< 0.1	1330	469	5.54
	9-Oct-19	1068.48	< 0.05	143	350	< 0.1	1320	534	5.69
	13-May-20	1071.91	0.05	139	363	< 0.1	1260	491	5.74
	23-Oct-20	1069.18	< 0.05	144	349	< 0.1	1330	544	5.61

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 (Dec. 2015 through July 2017) of groundwater sampling data for Wells MW-1B and MW-2.

Table 2
Conemaugh Generating Station
Ash Filter Ponds – 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														
		0.001	0.001	0.04	0.001	0.005	0.01	0.013	0.2	0.001	0.03	0.0002	0.02	0.001	0.0002	4.24
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	Background	MCL	RSL	RSL	MCL	RSL	MCL	MCL	MCL
		0.006	0.01	2	0.004	0.005	0.1	0.006	4.0	0.015	0.04	0.002	0.10	0.05	0.002	5
MW-1B (Upgradient)	17-Dec-15	< 0.001	< 0.001	0.04	< 0.001	0.005	< 0.01	0.012	< 0.1	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	4.24
	27-Jan-16	< 0.001	< 0.001	0.03	< 0.001	0.005	< 0.01	< 0.005	< 0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	0.29
	20-Apr-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.5	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.72
	19-Jul-16	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.006	0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	1.31
	11-Oct-16	< 0.001	< 0.001	0.02	< 0.001	0.002	< 0.01	< 0.005	0.2	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	0.78
	17-Jan-17	< 0.001	< 0.001	0.02	< 0.001	0.002	< 0.01	0.005	< 0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	0.24
	24-Apr-17	< 0.001	< 0.001	0.02	< 0.001	0.002	< 0.01	0.005	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.77
	20-Jul-17	< 0.001	< 0.001	0.03	< 0.001	0.005	< 0.01	0.013	< 0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	1.03
MW-2 (Upgradient)	11-Oct-16	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.69
	16-Nov-16	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.44
	21-Dec-16	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.43
	25-Jan-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.88
	21-Mar-17	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.09
	25-Apr-17	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.35
	13-Jun-17	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.001	< 0.0002	0.80
	27-Jul-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.14
MW-3 (Downgradient)	16-Dec-15	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	0.009	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.44
	26-Jan-16	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	0.011	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.86
	25-Apr-16	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	0.014	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.60
	25-Jul-16	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	0.009	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.46
	24-Oct-16	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	0.012	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.34
	17-Jan-17	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	0.008	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.28
	25-Apr-17	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	0.013	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.45
	25-Jul-17	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	0.010	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.33
MW-4 (Downgradient)	21-Dec-15	< 0.001	< 0.001	0.01	< 0.001	0.002	< 0.01	0.039	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.20
	4-Feb-16	< 0.001	< 0.001	0.01	< 0.001	0.003	< 0.01	0.038	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.47
	26-Apr-16	< 0.001	< 0.001	0.02	< 0.001	0.003	< 0.01	0.039	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.15
	25-Jul-16	< 0.001	< 0.001	0.01	< 0.001	0.003	< 0.01	0.035	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.43
	26-Oct-16	< 0.001	< 0.001	0.01	< 0.001	0.003	< 0.01	0.037	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.72
	30-Jan-17	< 0.001	< 0.001	0.01	< 0.001	0.003	< 0.01	0.034	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.09
	26-Apr-17	< 0.001	< 0.001	0.01	< 0.001	0.004	< 0.01	0.041	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.73
	27-Jul-17	< 0.001	< 0.001	0.01	< 0.001	0.003	< 0.01	0.039	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.24
MW-23 (Downgradient)	20-Dec-15	< 0.001	< 0.001	0.01	< 0.001	0.002	< 0.01	0.114	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	6.87
	2-Feb-16	< 0.001	< 0.001	0.02	< 0.001	0.002	< 0.01	0.106	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.03
	25-Apr-16	< 0.001	0.001	0.01	< 0.001	0.002	< 0.01	0.123	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.56
	21-Jul-16	< 0.001	< 0.001	0.01	< 0.001	0.003	< 0.01	0.114	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.65
	24-Oct-16	< 0.001	0.001	0.02	< 0.001	< 0.002	< 0.01	0.099	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.12
	18-Jan-17	< 0.001	< 0.001	0.02	< 0.001	0.002	< 0.01	0.100	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.66
	24-Apr-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.097	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.40
	24-Jul-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.095	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.21

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 (Dec. 2015 through July 2017) of groundwater sampling data for Wells MW-1B and MW-2.
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.

Table 3
Conemaugh Generating Station
Ash Disposal Site – Groundwater Analytical Data
CCR Appendix III Constituents

Monitoring Well	Date Sampled	Groundwater Elevation (ft. MSL)	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						
			0.05	8.86	1	0.1	96.2	4	4.07-6.81
MW-31 (Upgradient)	20-Dec-15	1435.54	< 0.05	6.2	1	< 0.1	50	4	6.15
	1-Feb-16	1438.04	< 0.05	7.1	1	< 0.1	34	4	6.42
	20-Apr-16	1439.54	< 0.05	7.8	< 1	< 0.1	44	4	6.45
	20-Jul-16	1435.89	< 0.05	6.3	1	< 0.1	58	4	6.24
	25-Oct-16	1436.24	< 0.05	6.7	1	< 0.1	70	4	5.82
	19-Jan-17	1438.74	< 0.05	6.4	1	< 0.1	64	3	6.19
	12-Apr-17	1439.74	< 0.05	6.2	1	< 0.1	52	4	5.75
	25-Jul-17	1437.24	< 0.05	7.4	1	< 0.1	72	4	5.62
	3-Oct-17	1434.49	< 0.05	6.6	1	< 0.1	32	4	6.36
	24-May-18	1441.64	< 0.05	6.2	1	< 0.1	58	4	6.29
	22-Oct-18	1439.94	< 0.05	84.9	1	< 0.1	40	4	6.17
	18-Apr-19	1440.19	< 0.05	6.0	1	< 0.1	32	4	6.01
	25-Jul-19	1438.14	< 0.05	5.7	1	< 0.1	54	4	5.74
	2-Oct-19	1435.54	< 0.05	6.3	1	< 0.1	44	4	5.36
	14-Jan-20	1439.43	< 0.05	6.2	1	< 0.1	52	4	3.77
	14-May-20	1440.37	< 0.05	5.6	1	< 0.1	40	4	6.24
	26-Oct-20	1434.56	< 0.05	6.0	1	< 0.1	54	4	5.82
MW-9 (Downgradient)	17-Dec-15	1100.47	< 0.05	102	83	0.1	426	72	7.08
	28-Jan-16	1100.57	0.09	102	97	0.1	424	63	7.20
	21-Apr-16	1099.77	< 0.05	96	81	0.1	398	65	7.38
	20-Jul-16	1098.97	0.05	99	93	< 0.1	466	62	7.57
	16-Nov-16	1099.82	< 0.05	104	94	< 0.1	466	55	7.05
	23-Jan-17	1100.77	< 0.05	96	92	< 0.1	406	65	7.27
	12-Apr-17	1099.47	< 0.05	96	96	< 0.1	446	77	6.74
	24-Jul-17	1099.82	< 0.05	104	98	< 0.1	456	79	6.60
	2-Oct-17	1099.67	< 0.05	94	92	< 0.1	430	75	7.41
	23-May-18	1100.17	< 0.05	104	112	< 0.1	456	84	7.29
	17-Oct-18	1100.32	< 0.05	102	109	< 0.1	472	67	7.09
	23-Apr-19	1100.07	0.31	106	118	0.1	472	73	7.12
	23-Jul-19	1099.97	< 0.05	107	120	0.1	520	72	7.15
	8-Oct-19	1099.02	< 0.05	116	116	< 0.1	500	72	7.35
	15-Jan-20	1100.46	< 0.05	112	134	< 0.1	468	69	4.89
	8-May-20	1100.49	< 0.05	100	129	< 0.1	504	71	7.30
	21-Oct-20	1098.77	< 0.05	102	103	0.1	486	70	7.09
MW-10 (Downgradient)	16-Dec-15	1103.26	< 0.05	106	90	0.1	444	97	7.71
	1-Feb-16	1103.36	< 0.05	102	100	0.1	416	107	7.56
	19-Apr-16	1103.06	< 0.05	102	95	0.1	454	99	7.45
	25-Jul-16	1102.16	< 0.05	100	91	0.1	476	114	7.25
	25-Oct-16	1102.16	< 0.05	117	84	0.1	522	113	7.50
	25-Jan-17	1103.86	< 0.05	94	105	< 0.1	482	110	7.21
	13-Apr-17	1102.86	< 0.05	97	99	< 0.1	460	97	6.77
	26-Jul-17	1102.66	0.05	108	94	< 0.1	508	127	6.75
	3-Oct-17	1102.61	< 0.05	111	91	0.1	490	130	7.38
	29-May-18	1104.76	< 0.05	99	99	0.1	492	106	7.14
	17-Oct-18	1103.66	< 0.05	98	89	0.1	456	106	7.10
	18-Apr-19	1103.46	< 0.05	85	103	< 0.1	388	103	7.06
	25-Jul-19	1102.86	< 0.05	108	94	0.1	476	120	7.07
	8-Oct-19	1102.06	< 0.05	110	84	< 0.1	470	123	7.35
	14-Jan-20	1103.85	< 0.05	87	123	0.1	466	117	4.86
	8-May-20	1103.66	< 0.05	84	103	0.1	424	106	6.84
	20-Oct-20	1101.93	< 0.05	102	85	< 0.1	468	120	7.20
MW-11 (Downgradient)	21-Dec-15	1102.68	0.08	180	55	0.1	814	223	6.77
	27-Jan-16	1103.38	0.09	169	48	< 0.1	776	191	7.02
	21-Apr-16	1102.63	0.07	161	46	< 0.1	754	170	7.31
	21-Jul-16	1101.68	0.14	156	52	< 0.1	754	208	7.37
	20-Oct-16	1101.93	0.09	166	48	0.1	754	199	6.97
	23-Jan-17	1103.63	< 0.05	164	51	0.1	770	207	6.98
	13-Apr-17	1103.28	0.07	170	49	< 0.1	774	183	6.65
	26-Jul-17	1102.33	0.10	150	60	< 0.1	700	182	6.35
	2-Oct-17	1102.48	0.07	151	61	0.1	732	210	7.20
	24-May-18	1103.08	< 0.05	139	54	0.1	736	192	7.02
	18-Oct-18	1102.93	0.07	169	60	0.1	750	194	6.94
	23-Apr-19	1102.88	0.37	159	58	0.2	758	213	6.58
	23-Jul-19	1102.73	0.06	153	59	0.1	714	185	6.73
	8-Oct-19	1101.78	0.08	165	60	< 0.1	700	181	6.74
	14-Jan-20	1103.38	0.07	157	58	0.2	730	193	4.61
	8-May-20	1103.16	0.07	156	58	< 0.1	718	190	6.91
	20-Oct-20	1101.49	< 0.05	152	58	< 0.1	710	179	6.80

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 (Dec. 2015 through July 2017) of groundwater sampling data for Well MW-31.

Table 4
Conemaugh Generating Station
Ash Disposal Site – 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														
		0.001	0.001	0.02	0.001	0.002	0.01	0.005	0.1	0.001	0.01	0.0002	0.02	0.001	0.0002	1.89
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	RSL	MCL	RSL	RSL	MCL	RSL	MCL	MCL	MCL
		0.006	0.01	2	0.004	0.005	0.1	0.006	4.0	0.15	0.04	0.002	0.10	0.05	0.002	5
MW-31 (Upgradient)	20-Dec-15	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	14.1
	1-Feb-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.08
	20-Apr-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.75
	20-Jul-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.77
	25-Oct-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.42
	19-Jan-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.03
	12-Apr-17	< 0.001	< 0.001	< 0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.51
	25-Jul-17	< 0.001	< 0.001	< 0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.05
	28-Mar-18	< 0.001	< 0.001	< 0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.63
	24-May-18	Not Analyzed	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.40
	22-Oct-18	Not Analyzed	Not Analyzed	0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.71
	18-Apr-19	< 0.001	< 0.001	< 0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.30
	25-Jul-19	Not Analyzed	Not Analyzed	0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.88
	2-Oct-19	Not Analyzed	Not Analyzed	0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	-0.50
	14-Jan-20	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.38
	14-May-20	Not Analyzed	Not Analyzed	0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.30
	26-Oct-20	Not Analyzed	Not Analyzed	0.02	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.13
MW-9 (Downgradient)	17-Dec-15	< 0.001	< 0.001	0.17	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	3.66
	28-Jan-16	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.18
	21-Apr-16	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	3.90
	20-Jul-16	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.05
	16-Nov-16	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.78
	23-Jan-17	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.70
	12-Apr-17	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.03
	24-Jul-17	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.74
	28-Mar-18	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.37
	23-May-18	Not Analyzed	Not Analyzed	0.04	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.32
	17-Oct-18	Not Analyzed	Not Analyzed	0.05	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.67
	23-Apr-19	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.92
	23-Jul-19	Not Analyzed	Not Analyzed	0.06	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.60
	8-Oct-19	Not Analyzed	Not Analyzed	0.06	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.54
	15-Jan-20	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	0.002	0.22
	8-May-20	Not Analyzed	Not Analyzed	0.05	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.60
	21-Oct-20	Not Analyzed	Not Analyzed	0.05	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.04

See notes at end of table.

Table 4
Conemaugh Generating Station
Ash Disposal Site – 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														
		0.001	0.001	0.02	0.001	0.002	0.01	0.005	0.1	0.001	0.01	0.0002	0.02	0.001	0.0002	1.89
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	RSL	MCL	RSL	RSL	MCL	RSL	MCL	MCL	MCL
		0.006	0.01	2	0.004	0.005	0.1	0.006	4.0	0.15	0.04	0.002	0.10	0.05	0.002	5
MW-10 (Downgradient)	16-Dec-15	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.04
	1-Feb-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.25
	19-Apr-16	< 0.001	< 0.001	0.10	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.68
	25-Jul-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.55
	25-Oct-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.62
	25-Jan-17	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.29
	13-Apr-17	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.34
	26-Jul-17	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.05
	29-Mar-18	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.29
	29-May-18	Not Analyzed	Not Analyzed	0.03	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.33
	17-Oct-18	Not Analyzed	Not Analyzed	0.04	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.48
	18-Apr-19	< 0.001	< 0.001	0.03	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.79
	25-Jul-19	Not Analyzed	Not Analyzed	0.03	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.05
	8-Oct-19	Not Analyzed	Not Analyzed	0.04	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.15
	14-Jan-20	< 0.001	< 0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.13
	8-May-20	Not Analyzed	Not Analyzed	0.03	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.60
	20-Oct-20	Not Analyzed	Not Analyzed	0.03	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	-0.02
MW-11 (Downgradient)	21-Dec-15	< 0.001	< 0.001	0.07	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	2.21
	27-Jan-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.33
	21-Apr-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	3.18
	21-Jul-16	< 0.001	< 0.001	0.08	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.70
	20-Oct-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.93
	23-Jan-17	< 0.001	< 0.001	0.07	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.48
	13-Apr-17	< 0.001	< 0.001	0.07	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.46
	26-Jul-17	< 0.001	< 0.001	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.80
	29-Mar-18	< 0.001	< 0.001	0.08	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.78
	24-May-18	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.83
	18-Oct-18	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.20
	23-Apr-19	< 0.001	< 0.001	0.08	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.84
	23-Jul-19	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.57
	8-Oct-19	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.45
	4-Jan-20	< 0.001	< 0.001	0.08	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.48
	8-May-20	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.68
	20-Oct-20	Not Analyzed	Not Analyzed	0.05	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.08

Notes:

= Value determined as a statistical outlier and excluded from background calculations.

= Result from July 17, 2018 re-sampling; prior result from May 23, 2018 sampling (103.6 pCi/L) was associated with use of incorrect analytical method (gamma spec Method 901.1).

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 (Dec. 2015 through July 2017) of groundwater sampling data for Well MW-31.
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

LEGEND:

MW-3 (1070.26) — CCR GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED ON OCTOBER 23, 2020

GROUNDWATER GENERALIZED FLOW DIRECTION

NOTE:

TOP OF CASING ELEVATION FOR WELL MW-3 WAS RE-SURVEYED IN JANUARY 2020, AND ADJUSTED UPWARD BY 4.25 FEET.

REFERENCE:

GOOGLE AERIAL PHOTOGRAPH, DATED 9/26/2019.

SCALE

0 100 200 FEET

APTIM

500 Penn Center Boulevard,
Suite 1000
Pittsburgh, Pennsylvania 15235

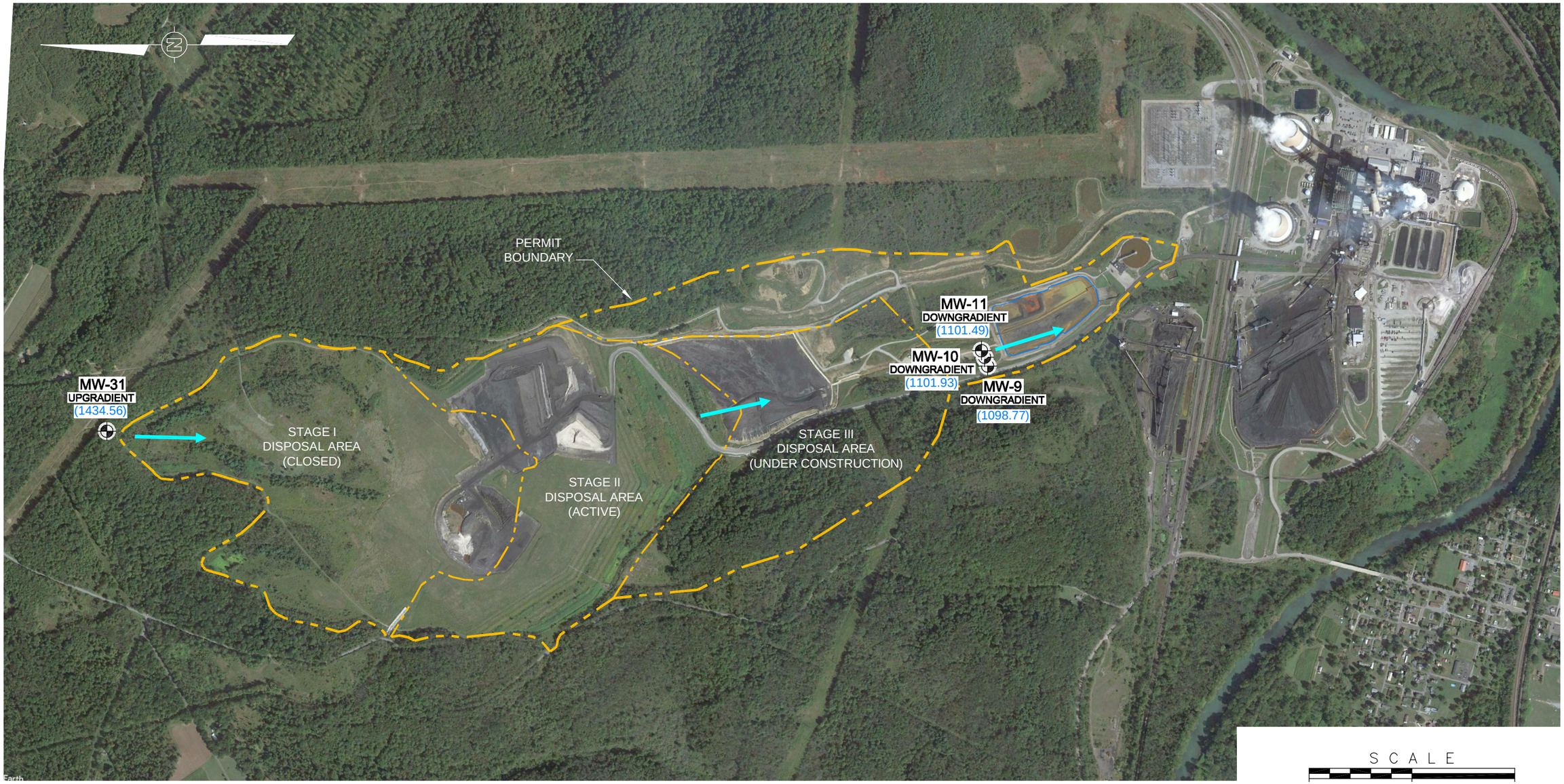
FIGURE 1
CCR COMPLIANCE GROUNDWATER MONITORING WELL LOCATION MAP
ASH FILTER PONDS
CONEMAUGH GENERATING STATION
INDIANA COUNTY, PENNSYLVANIA

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	12/16/20	---	E. Schlegel	D. Shott	D. Shott	631003459-B4

File: O:\PROJECT\631003459_Conemaugh\631003459-B4.dwg
Plot Date/Time: Dec 16, 2020 - 11:41am
Plotted By: Evan.Schlegel
Xref : Image

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
--	E. Schlegel	--	--	631003459-B5

OFFICE	DATE
Pittsburgh, PA	12/16/20



SCALE
0 1000 2000 FEET

LEGEND:

MW-9 (1098.77) — CCR GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED BETWEEN OCTOBER 20 AND 26, 2020.

GROUNDWATER GENERALIZED FLOW DIRECTION

REFERENCE:

GOOGLE AERIAL PHOTOGRAPH, DATED 9/26/2019.

APTIM
500 Penn Center Boulevard,
Suite 1000
Pittsburgh, Pennsylvania 15235

FIGURE 2
CCR COMPLIANCE GROUNDWATER MONITORING WELL LOCATION MAP
ASH/REFUSE DISPOSAL SITE
CONEMAUGH GENERATING STATION
INDIANA COUNTY, PENNSYLVANIA

File: O:\PROJECT\631003459_Conemaugh\631003459-B5.dwg
Plot Date/Time: Dec 16, 2020 - 11:35am
Plotted By: Evan.Schlegel
Xref:
Image