COAL COMBUSTION RESIDUALS
GROUNDWATER MONITORING AND CORRECTIVE ACTION
ANNUAL REPORT FOR REPORTING YEAR 2022
ASH FILTER PONDS AND ASH DISPOSAL SITE

Prepared for:

KEYSTONE STATION

Keystone-Conemaugh Projects, LLC
Keystone Generating Station
Shelocta, Pennsylvania

Prepared by:

APTIM

Aptim Environmental & Infrastructure, LLC
Pittsburgh, Pennsylvania

December 2022

Table of Contents

List of Tables

List of Figures

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 Title 40 Code of Federal Regulations (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 2022) of the Ash Filter Ponds and the Ash Disposal Site at the Keystone-Conemaugh Projects, LLC–Keystone 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, 3.0, and 4.0) in the main body of the report.

The Ash Filter Ponds represent a collective CCR unit which encompasses three ponds designated Ponds "A," "B," and "C" (see Figure 1). Also as shown on Figure 1, the associated CCR groundwater monitoring network is comprised of four wells, including one upgradient location (Well MW-5) and three downgradient locations (Wells MW-6, MP-29, and MP-30). For Calendar Year 2022, the Ash Filter Ponds entered and ended the period in the Assessment Monitoring Program. The Ash Filter Ponds have remained in Assessment Monitoring since being transitioned in March 2018 following confirmed statistically significant increases (SSIs) for CCR Appendix III constituents, including boron and chloride in two of the downgradient wells (see Table 1). Assessment Monitoring events conducted in May and November 2022 (see Table 2) 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 Appendix III constituents at values above background in downgradient Wells MP-29 and MP-30 (boron and chloride). No groundwater-related findings to date have triggered the Ash Filter Ponds into an Assessment of Corrective Measures.

As shown on Figure 2, the Ash Disposal Site is a captive landfill located in the northern portion of the Keystone Generating Station proper, and is represented by the East Valley and West Valley Disposal Sites. The CCR groundwater monitoring network for the East Valley Disposal Site consists of four wells, including one upgradient/side-gradient location (Well MP-21) and three downgradient locations (Wells MP-4, MP-17B, and MP-18). For Calendar Year 2022, the East Valley Disposal Site entered and ended the period in the Assessment Monitoring Program. The East Valley Disposal Site has remained in Assessment Monitoring since being transitioned in March 2018 following confirmed SSIs for CCR Appendix III constituents, including calcium, sulfate, and TDS in the downgradient wells (see Table 3). Assessment Monitoring events conducted in May and November 2022 (see Table 4) did not reveal any CCR Appendix IV

constituents at concentrations representing an SSL above the corresponding GWPSs. These events further continued to show several Appendix III constituents at values above background in each of the downgradient wells, including Wells MP-4 and MP-17B (calcium, sulfate and total dissolved solids [TDS]), and Well MP-18 (calcium and sulfate). No groundwater-related findings to date have triggered the East Valley Disposal Site into an Assessment of Corrective Measures.

Also as shown on Figure 2, the CCR groundwater monitoring network for the West Valley Disposal Site consists of four wells, including one upgradient/side-gradient location (Well MP-21) and three downgradient locations (Wells MP-16, MP-23, and MP-24). For Calendar Year 2022, the West Valley Disposal Site entered and ended the period in the Assessment Monitoring Program. The West Valley Disposal Site has remained in Assessment Monitoring since being transitioned in March 2018 following confirmed SSIs for CCR Appendix III constituents, including calcium, chloride, pH, sulfate, and TDS in the downgradient wells (see Table 5). Assessment Monitoring events conducted in May and November 2022 (see Table 6) did not reveal any CCR Appendix IV constituents at concentrations representing an SSL above the corresponding GWPSs. These events further continued to show several Appendix III constituents at values above/outside background in the downgradient wells, including Well MP-16 (chloride) and Well MP-23 (calcium, chloride, pH, sulfate, and TDS). No groundwater-related findings to date have triggered the West Valley Disposal Site into an Assessment of Corrective Measures.

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.

The Keystone Generating Station (Keystone) is a coal-fired power plant located in Shelocta, Pennsylvania. 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 Keystone Ash Disposal Site (represented by the East Valley and West Valley Disposal Sites), and three Ash Filter Ponds (Ponds "A," "B," and "C") 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 three ponds collectively.

In summary, this sixth 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 2022. 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 four wells, including Well MW-5 (upgradient) and Wells MW-6, MP-29, and MP-30 (downgradient). The screened intervals of all four wells cross the interface between the Carmichaels Formation and the Mahoning Sandstone, recognized as the horizon for the uppermost aquifer. The locations of the groundwater monitoring wells are shown on Figure 1, along with a 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 2022 reporting period.

2.2 2022 Data Collection

Following their transition in early 2018, the Ash Filter Ponds continued in the CCR Assessment Monitoring Program during the 2022 reporting period. Accordingly, samples were collected and analyzed for Appendix III and Appendix IV constituents as required, during the May and November 2022 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 2022 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 2022 sampling events were measured at concentrations representing a statistically significant level (SSL) above the corresponding groundwater protection standards (GWPSs) in any of the downgradient wells. Detected concentrations of at least one Appendix IV constituent (barium) as well as several Appendix III constituents (boron and chloride); however, do remain above calculated background, providing the basis for continued Assessment Monitoring into 2023.

2.3 2022 Monitoring Program Transitions

During 2022, there were no transitions between monitoring programs, with the Ash Filter Ponds remaining in the CCR Assessment Monitoring Program.

2.4 2022 Corrective Actions

During 2022, there were no problems identified or corrective actions undertaken.

2.5 2023 Projected Activities

As noted, it is anticipated that Assessment Monitoring activities will continue for the Ash Filter Ponds during 2023, with continued review of Appendix III/Appendix IV constituent

concentrations and comparison against calculated background and established groundwater protection standards.

3.0 East Valley Disposal Site

3.1 Groundwater Monitoring Network

The CCR groundwater monitoring system for the East Valley Disposal Site is comprised of four wells, including Well MP-21 (upgradient/side-gradient) and Wells MP-4, MP-17B, and MP-18 (downgradient). The screened intervals of all four monitoring wells are in bedrock units, including the Mahoning Sandstone which is represented as the uppermost aquifer in this area. The locations of the monitoring wells are shown on Figure 2 along with a depiction of the generalized groundwater flow direction. Each of these wells was already existing, and no new wells were added nor were any existing wells abandoned/replaced during the 2022 reporting period.

3.2 2022 Data Collection

Following its transition in early 2018, the East Valley Disposal Site continued in the CCR Assessment Monitoring Program during the 2022 reporting period. Accordingly, samples were collected and analyzed for Appendix III and Appendix IV constituents as required, during the May and November 2022 monitoring events. Results from the 2022 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 2022 sampling events were measured at concentrations representing an SSL above the corresponding GWPSs in any of the downgradient wells. Detected concentrations of several Appendix III constituents (calcium, sulfate, and total dissolved solids [TDS]); however, do remain above calculated background, providing the basis for continued Assessment Monitoring into 2023.

3.3 2022 Monitoring Program Transitions

During 2022, there were no transitions between monitoring programs, with the East Valley Disposal Site remaining in the CCR Assessment Monitoring Program.

3.4 2022 Corrective Actions

During 2022, there were no problems identified or corrective actions undertaken.

3.5 2023 Projected Activities

As noted, it is anticipated that Assessment Monitoring activities will continue for the East Valley Disposal Site during 2023, with continued review of Appendix III/Appendix IV constituent concentrations and comparison against calculated background and established groundwater protection standards.

4.0 West Valley Disposal Site

4.1 Groundwater Monitoring Network

The CCR groundwater monitoring system for the West Valley Disposal Site is comprised of four wells, including Well MP-21 (upgradient/side-gradient) and Wells MP-16, MP-23, and MP-24 (downgradient). The screened intervals of all four monitoring wells are in the Mahoning Sandstone which is represented as the uppermost aquifer in this area. The locations of the monitoring wells are shown on Figure 2 along with a depiction of the generalized groundwater flow direction. Each of these wells was already existing, and no new wells were added nor were any existing wells abandoned/replaced during the 2022 reporting period.

4.2 2022 Data Collection

Following its transition in early 2018, the West Valley Disposal Site continued in the CCR Assessment Monitoring Program during the 2022 reporting period. Accordingly, samples were collected and analyzed for Appendix III and Appendix IV constituents, as required, during the May and November 2022 monitoring events. Results from the 2022 sampling events are summarized in Tables 5 and 6, covering Appendix III and Appendix IV, respectively. As shown in Table 6, none of the Appendix IV constituents from the 2022 sampling events were measured at concentrations representing an SSL above the corresponding GWPSs in any of the downgradient wells. Detected concentrations of at least one Appendix IV constituent (barium) as well as several Appendix III constituents (calcium, chloride, pH, sulfate, and TDS); however, do remain above/outside calculated background, providing the basis for continued Assessment Monitoring into 2023.

4.3 2022 Monitoring Program Transitions

During 2022, there were no transitions between monitoring programs, with the West Valley Disposal Site remaining in the CCR Assessment Monitoring Program.

4.4 2022 Corrective Actions

During 2022, there were no problems identified or corrective actions undertaken.

4.5 2023 Projected Activities

As noted, it is anticipated that Assessment Monitoring activities will continue for the West Valley Disposal Site during 2023, with continued review of Appendix III/Appendix IV constituent concentrations and comparison against calculated background and established groundwater protection standards.

Tables

Table 1
Keystone 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						
			0.06	120.1	48	0.2	819	372	4.11-6.92
MW-5 (Upgradient)	23-Dec-15	1003.51	< 0.05	54.7	36	< 0.1	482	272	5.67
	14-Mar-16	1005.46	< 0.05	59.5	34	< 0.1	458	272	5.20
	19-May-16	1002.11	< 0.05	71.6	36	< 0.1	562	304	5.75
	17-Aug-16	1001.46	0.05	101	23	< 0.1	686	326	5.69
	30-Nov-16	1001.96	< 0.05	59.7	35	< 0.1	496	256	5.20
	23-Feb-17	1008.41	0.06	59.9	39	0.2	432	256	5.84
	2-May-17	1006.21	< 0.05	66.6	44	0.1	534	297	4.68
	21-Aug-17	1003.56	< 0.05	67.6	39	0.1	560	317	6.08
	11-Oct-17	1001.76	< 0.05	68.6	40	< 0.1	558	341	5.18
	15-May-18	1009.71	< 0.05	65.9	38	0.2	570	314	5.51
	12-Nov-18	1010.91	0.06	81.2	34	0.3	546	332	6.08
	30-Apr-19	1010.56	0.20	81.1	36	0.2	580	337	5.07
	22-Aug-19	1005.66	< 0.05	103	38	0.2	668	390	5.01
	25-Nov-19	1004.01	< 0.05	92.7	34	0.2	684	391	5.28
	24-Feb-20	1011.94	0.05	93.3	34	0.3	552	323	5.09
	2-Jun-20	1009.18	< 0.05	85.8	36	0.2	624	314	5.28
	19-Nov-20	1001.31	< 0.05	80.7	29	0.1	622	371	5.21
	25-May-21	1009.10	< 0.05	67.4	31	0.1	466	263	5.19
	22-Nov-21	1008.74	0.07	82.5	33	0.2	526	290	5.14
	24-May-22	1012.92	< 0.05	92.2	36	0.1	664	334	5.35
	15-Nov-22	1007.47	0.06	110.0	35	0.2	700	350	4.84
MW-6 (Downgradient)	22-Dec-15	1001.81	< 0.05	8.3	14	< 0.1	84	23	5.62
	16-Mar-16	1002.06	< 0.05	7.1	7	< 0.1	62	11	5.76
	18-May-16	1000.56	< 0.05	8.3	6	< 0.1	110	14	5.48
	25-Aug-16	999.96	< 0.05	9.3	7	< 0.1	104	18	5.38
	17-Nov-16	1000.61	< 0.05	7.1	6	< 0.1	80	10	5.64
	28-Feb-17	1001.21	< 0.05	6.3	8	< 0.1	62	8	6.43
	3-May-17	1002.16	< 0.05	7.2	7	< 0.1	92	10	5.17
	22-Aug-17	1001.56	< 0.05	6.8	7	< 0.1	92	11	4.87
	10-Oct-17	1000.41	< 0.05	7.3	6	< 0.1	84	14	5.63
	10-May-18	1002.61	< 0.05	6.6	8	< 0.1	92	8	6.15
	30-Oct-18	1004.36	< 0.05	6.0	8	< 0.1	78	8	5.57
	29-Apr-19	1003.96	< 0.05	6.3	7	< 0.1	78	9	5.66
	17-Sep-19	1001.56	< 0.05	6.8	7	< 0.1	78	13	5.50
	26-Nov-19	1001.96	< 0.05	6.1	6	< 0.1	66	10	6.06
	25-Feb-20	1000.77	< 0.05	5.7	8	< 0.1	62	8	5.50
	2-Jun-20	1000.49	< 0.05	6.5	7	< 0.1	84	11	5.75
	19-Nov-20	999.23	< 0.05	8.5	7	< 0.1	84	19	5.64
	25-May-21	1000.85	< 0.05	6.4	6	< 0.1	70	14	5.50
	22-Nov-21	999.74	< 0.05	6.6	5	< 0.1	70	12	5.42
	24-May-22	1001.09	< 0.05	6.0	7	< 0.1	66	9	5.33
	15-Nov-22	999.57	< 0.05	7.2	6	< 0.1	66	13	5.20

See notes at end of table.

Table 1
Keystone 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						
			0.06	120.1	48	0.2	819	372	4.11-6.92
MP-29 (Downgradient)	22-Dec-15	1000.63	0.07	106	112	0.2	684	222	6.56
	15-Mar-16	1000.98	0.08	88.9	92	0.2	546	177	7.03
	19-May-16	1000.03	0.14	120	142	0.2	758	242	6.60
	10-Aug-16	999.28	0.10	109	129	0.2	830	235	6.77
	22-Nov-16	1000.13	0.09	130	116	0.1	764	247	6.73
	27-Feb-17	1001.33	0.08	80.9	73	0.2	548	173	7.75
	3-May-17	1002.63	0.08	105	92	0.1	568	184	6.13
	21-Aug-17	1002.73	0.12	112	100	< 0.1	646	226	7.50
	12-Oct-17	1003.18	0.05	120	129	0.2	734	294	6.60
	14-May-18	1004.33	0.08	62.3	32	< 0.1	332	98	7.11
	30-Oct-18	1005.13	0.09	54.7	18	< 0.1	304	76	6.87
	29-Apr-19	1004.73	0.06	52.2	18	< 0.1	274	76	6.73
	17-Sep-19	1002.93	0.12	112	71	< 0.1	558	194	6.86
	26-Nov-19	1003.93	0.13	137	82	< 0.1	656	232	7.22
	25-Feb-20	1001.61	0.12	123	83	< 0.1	638	253	6.44
	2-Jun-20	1001.15	0.12	142	108	< 0.1	758	280	6.73
	19-Nov-20	999.36	0.15	161	110	0.1	864	385	6.66
	25-May-21	1001.31	0.11	125	97	< 0.1	660	254	6.33
	22-Nov-21	1000.57	0.15	152	109	< 0.1	848	356	6.43
	24-May-22	1001.55	0.09	105	62	< 0.1	602	249	6.53
	15-Nov-22	1001.57	0.14	116	63	< 0.1	620	253	6.18
MP-30 (Downgradient)	22-Dec-15	998.30	0.06	87.7	103	< 0.1	526	197	6.65
	15-Mar-16	998.60	0.07	59.1	101	< 0.1	348	103	6.07
	18-May-16	997.55	< 0.05	104	172	< 0.1	796	265	6.17
	10-Aug-16	996.75	< 0.05	114	120	< 0.1	792	289	6.45
	22-Nov-16	996.95	< 0.05	110	107	0.1	578	202	7.11
	27-Feb-17	997.75	0.08	61.6	97	< 0.1	424	131	7.13
	2-May-17	999.25	0.08	99.2	283	< 0.1	800	107	5.83
	22-Aug-17	999.05	0.13	71.8	197	< 0.1	604	127	5.47
	11-Oct-17	998.15	0.10	81.9	195	< 0.1	672	176	6.04
	15-May-18	1000.55	0.07	58.1	191	< 0.1	588	72	6.21
	30-Oct-18	1001.75	0.12	30.9	38	< 0.1	228	69	5.99
	29-Apr-19	1000.45	0.06	35.0	45	< 0.1	234	66	5.96
	17-Sep-19	998.35	< 0.05	84.4	103	< 0.1	494	188	6.07
	26-Nov-19	999.15	0.08	67.1	92	< 0.1	396	100	6.48
	25-Feb-20	997.14	< 0.05	55.4	99	< 0.1	386	154	5.76
	2-Jun-20	996.26	0.05	48.6	26	< 0.1	256	95	6.14
	23-Nov-20	994.93	0.08	63.9	56	< 0.1	374	115	6.22
	25-May-21	997.08	0.06	51.6	39	< 0.1	268	91	5.93
	22-Nov-21	996.86	0.09	69.7	33	< 0.1	314	97	5.96
	24-May-22	996.90	< 0.05	61.9	103	< 0.1	446	187	5.74
	15-Nov-22	998.08	0.08	52.5	6	< 0.1	212	65	5.77

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 Aug. 2017) of groundwater sampling data for Well MW-5.

Table 2
Keystone 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	0.01	0.001	0.002	0.01	0.096	0.2	0.001	0.01	0.0002	0.02	0.008	0.0002	4.36
		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	0.096	4.0	0.015	0.04	0.002	0.10	0.05	0.002	5
MW-5 (Upgradient)	23-Dec-15	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.008	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.006	< 0.0002	0.26
	14-Mar-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.014	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.005	< 0.0002	0.27
	19-May-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	0.006	< 0.0002	0.69
	17-Aug-16	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.096	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	0.002	< 0.0002	0.54
	30-Nov-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	0.006	< 0.0002	1.89
	23-Feb-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.020	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.004	< 0.0002	0.73
	2-May-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.023	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.005	< 0.0002	0.76
	21-Aug-17	< 0.001	< 0.001	0.01	< 0.001	< 0.002	< 0.01	0.009	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.007	< 0.0002	0.35
	19-Mar-18	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.020	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.004	< 0.0002	0.19
	15-May-18	Not Analyzed	< 0.001	0.01	Not Analyzed	Not Analyzed	Not Analyzed	0.025	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.006	Not Analyzed	0.94
	12-Nov-18	Not Analyzed	< 0.001	0.02	Not Analyzed	Not Analyzed	Not Analyzed	0.032	0.3	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.006	Not Analyzed	0.79
	30-Apr-19	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.031	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.006	< 0.0002	0.81
	22-Aug-19	Not Analyzed	Not Analyzed	0.02	Not Analyzed	Not Analyzed	Not Analyzed	0.027	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.006	Not Analyzed	1.36
	25-Nov-19	Not Analyzed	Not Analyzed	0.01	Not Analyzed	Not Analyzed	Not Analyzed	0.012	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.007	Not Analyzed	0.26
	24-Feb-20	< 0.001	< 0.001	0.02	0.001	< 0.002	< 0.01	0.035	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	0.006	< 0.0002	0.63
	2-Jun-20	Not Analyzed	Not Analyzed	0.02	< 0.001	Not Analyzed	Not Analyzed	0.033	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.005	Not Analyzed	0.65
	19-Nov-20	Not Analyzed	Not Analyzed	0.01	< 0.001	Not Analyzed	Not Analyzed	0.008	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.007	Not Analyzed	1.54
	25-May-21	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.022	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.004	< 0.0002	0.46
	22-Nov-21	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.024	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.004	< 0.0002	0.66
	24-May-22	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.035	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.004	< 0.0002	0.63
	15-Nov-22	< 0.001	< 0.001	0.02	< 0.001	< 0.002	< 0.01	0.031	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.006	< 0.0002	0.38
MW-6 (Downgradient)	22-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	2.05
	16-Mar-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	0.67
	18-May-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	0.57
	25-Aug-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	0.67
	17-Nov-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	0.45
	28-Feb-17	< 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	0.40
	3-May-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	0.33
	22-Aug-17	< 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	0.79
	27-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	0.48
	10-May-18	Not Analyzed	< 0.001	0.07	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.07
	30-Oct-18	Not Analyzed	< 0.001	0.06	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.29
	29-Apr-19	< 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	0.50
	17-Sep-19	Not Analyzed	Not Analyzed	0.05	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.51
	26-Nov-19	Not Analyzed	Not Analyzed	0.06	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.43
	25-Feb-20	< 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	-0.05
	2-Jun-20	Not Analyzed	Not Analyzed	0.05	< 0.001	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.46
	19-Nov-20	Not Analyzed	Not Analyzed	0.05	< 0.001	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.30
	25-May-21	< 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	0.30
	22-Nov-21	< 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	0.09
	24-May-22	< 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	0.00
	15-Nov-22	< 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	0.19

See notes at end of table.

Table 2
Keystone 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	0.01	0.001	0.002	0.01	0.096	0.2	0.001	0.01	0.0002	0.02	0.008	0.0002	4.36
		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	0.096	4.0	0.015	0.04	0.002	0.10	0.05	0.002	5
MP-29 (Downgradient)	22-Dec-15	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	3.16
	15-Mar-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	0.86
	19-May-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	0.60
	10-Aug-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	0.64
	22-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	0.34
	27-Feb-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	0.14
	3-May-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	0.40
	21-Aug-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	0.61
	19-Mar-18	< 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	0.49
	14-May-18	Not Analyzed	< 0.001	0.02	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.22
	30-Oct-18	Not Analyzed	< 0.001	0.03	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	-0.26
	29-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	0.19
	17-Sep-19	Not Analyzed	Not Analyzed	0.06	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.37
	26-Nov-19	Not Analyzed	Not Analyzed	0.27	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.48
	25-Feb-20	< 0.001	< 0.001	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.08
	2-Jun-20	Not Analyzed	Not Analyzed	0.12	< 0.001	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.91
	19-Nov-20	Not Analyzed	Not Analyzed	0.11	< 0.001	Not Analyzed	Not Analyzed	< 0.005	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.60
	25-May-21	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.06
	22-Nov-21	< 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	0.40
	24-May-22	< 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	0.30
	15-Nov-22	< 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	0.58
MP-30 (Downgradient)	22-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	2.34
	15-Mar-16	< 0.001	0.004	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	10.37
	18-May-16	< 0.001	< 0.001	0.06	< 0.001	< 0.002	< 0.01	0.011	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.60
	10-Aug-16	< 0.001	0.003	0.05	< 0.001	< 0.002	< 0.01	0.016	< 0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	0.99
	22-Nov-16	< 0.001	0.009	0.05	< 0.001	< 0.002	< 0.01	0.007	0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	0.24
	27-Feb-17	< 0.001	0.002	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.37
	2-May-17	< 0.001	0.005	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.44
	22-Aug-17	< 0.001	0.005	0.07	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.54
	27-Mar-18	< 0.001	0.002	0.07	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.31
	15-May-18	Not Analyzed	0.003	0.06	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.92
	30-Oct-18	Not Analyzed	0.009	0.07	Not Analyzed	Not Analyzed	Not Analyzed	0.012	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.001	Not Analyzed	0.72
	29-Apr-19	< 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	-0.04
	17-Sep-19	Not Analyzed	Not Analyzed	0.07	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.35
	26-Nov-19	Not Analyzed	Not Analyzed	0.08	Not Analyzed	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.85
	25-Feb-20	< 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	0.47
	2-Jun-20	Not Analyzed	Not Analyzed	0.05	< 0.001	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.36
	23-Nov-20	Not Analyzed	Not Analyzed	0.06	< 0.001	Not Analyzed	Not Analyzed	< 0.005	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.30
	25-May-21	< 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	0.39
	22-Nov-21	< 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	0.90
	24-May-22	< 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	0.05
	15-Nov-22	< 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

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 Aug. 2017) of groundwater sampling data for Well MW-5.
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
Keystone Generating Station
East Valley 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						
			0.08	47.8	3.8	0.3	222	15	6.52-9.11
MP-21 (Upgradient)	28-Dec-15	1069.20	< 0.05	38.0	2	0.2	204	15	7.85
	8-Mar-16	1069.15	0.05	40.5	2	0.2	210	15	7.86
	31-May-16	1072.00	0.08	42.5	1	0.2	202	14	7.37
	22-Aug-16	1066.55	0.06	39.0	1	0.2	206	14	7.50
	8-Nov-16	1068.50	0.05	42.3	3	0.2	198	15	8.28
	6-Mar-17	1068.06	0.06	40.3	2	0.2	198	13	7.32
	31-May-17	1068.60	< 0.05	37.0	2	0.2	192	15	7.27
	28-Aug-17	1066.80	0.05	39.6	2	0.2	204	15	8.30
	10-Oct-17	1066.20	0.05	41.4	2	0.2	200	15	7.68
	16-May-18	1069.00	< 0.05	43.6	2	0.2	196	16	7.79
	7-Nov-18	1068.40	0.17	70.9	2	0.2	228	15	8.97
	7-May-19	1067.70	< 0.05	64.6	2	0.3	204	15	7.55
	4-Sep-19	1065.85	0.13	49.3	2	0.2	204	17	7.53
	4-Nov-19	1065.90	< 0.50	129	2	0.2	168	16	7.77
	24-Feb-20	1067.67	0.06	46.9	2	0.3	200	16	7.47
	21-May-20	1067.02	0.05	55.2	2	0.2	190	16	7.77
	23-Nov-20	1063.13	0.05	41.5	2	0.2	212	15	7.31
	25-May-21	1065.99	0.06	43.3	2	0.2	190	14	7.48
	22-Nov-21	1062.87	0.06	44.4	2	0.3	202	16	7.48
	23-May-22	1065.78	0.07	90.9	2	0.1	180	14	7.39
	14-Nov-22	1063.88	0.05	39.5	2	0.2	178	16	7.44
MP-4 (Downgradient)	29-Dec-15	1022.13	< 0.05	46.0	2	0.1	158	17	7.71
	9-Mar-16	1016.78	< 0.05	57.8	2	0.1	206	54	8.02
	25-May-16	1017.08	< 0.05	77.0	3	< 0.1	266	39	8.00
	23-Aug-16	1017.78	< 0.05	74.4	1	< 0.1	296	20	7.87
	28-Nov-16	1015.48	< 0.05	67.3	2	< 0.1	230	23	8.12
	7-Mar-17	1021.48	< 0.05	42.1	1	0.1	156	15	8.08
	23-May-17	1015.78	< 0.05	57.9	< 1	< 0.1	214	11	8.49
	23-Aug-17	1016.08	< 0.05	80.6	1	< 0.1	248	14	6.87
	12-Oct-17	1016.88	< 0.05	74.5	2	< 0.1	252	19	7.25
	14-May-18	1021.68	< 0.05	59.2	< 1	< 0.1	194	21	7.68
	31-Oct-18	1020.08	< 0.05	65.3	< 1	< 0.1	220	12	7.43
	16-May-19	1019.28	0.06	64.5	< 1	< 0.1	202	26	8.18
	15-Aug-19	1015.58	< 0.05	88.9	1	< 0.1	246	26	7.58
	21-Nov-19	1015.88	< 0.05	64.4	< 1	< 0.1	194	14	7.38
	20-Feb-20	1017.27	< 0.05	43.7	< 1	0.1	164	19	7.83
	21-May-20	1016.02	< 0.05	61.9	< 1	< 0.1	176	12	7.50
	19-Nov-20	1015.53	< 0.05	53.9	< 1	< 0.1	182	13	7.37
	24-May-21	1015.74	< 0.05	58.9	< 1	< 0.1	202	33	7.37
	18-Nov-21	1015.77	< 0.05	76.1	1	< 0.1	244	24	7.05
	19-May-22	1017.99	< 0.05	53.3	< 1	< 0.1	168	11	7.31
	10-Nov-22	1015.27	< 0.05	69.8	2	< 0.1	234	28	7.12
MP-17B (Downgradient)	29-Dec-15	1025.11	< 0.05	79.2	2	0.1	304	59	7.32
	10-Mar-16	1024.56	< 0.05	81.0	2	0.1	322	52	6.92
	1-Jun-16	1024.16	< 0.05	88.2	3	0.2	414	57	7.48
	18-Aug-16	1024.16	< 0.05	83.5	2	0.1	280	48	7.15
	29-Nov-16	1023.36	< 0.05	90.9	2	< 0.1	362	31	7.32
	2-Mar-17	1024.46	< 0.05	81.0	3	0.1	302	30	7.09
	30-May-17	1024.71	< 0.05	80.7	3	< 0.1	310	34	6.98
	23-Aug-17	1022.91	< 0.05	84.7	2	< 0.1	326	26	7.11
	9-Oct-17	1022.06	< 0.05	81.5	2	< 0.1	354	50	7.40
	9-May-18	1024.41	0.09	73.2	3	0.1	304	39	7.57
	31-Oct-18	1024.61	< 0.05	73.9	2	< 0.1	312	52	7.22
	16-May-19	1025.11	0.07	82.4	2	< 0.1	286	50	7.56
	15-Aug-19	1023.21	< 0.05	78.7	2	< 0.1	270	37	7.24
	19-Nov-19	1022.86	< 0.05	75.4	2	0.1	288	40	7.07
	24-Feb-20	1024.38	< 0.05	92.0	2	0.1	290	37	7.35
	21-May-20	1023.92	< 0.05	73.7	2	< 0.1	278	43	7.42
	23-Nov-20	1021.76	< 0.05	67.5	2	< 0.1	326	49	7.33
	24-May-21	1024.13	< 0.05	80.5	2	< 0.1	318	62	7.13
	18-Nov-21	1023.32	< 0.05	79.1	1	0.1	318	51	6.79
	19-May-22	1024.42	< 0.05	75.5	2	< 0.1	298	43	6.94
	14-Nov-22	1022.66	< 0.05	78.9	2	< 0.1	296	48	6.96

See notes at end of table.

Table 3
Keystone Generating Station
East Valley 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						
			0.08	47.8	3.8	0.3	222	15	6.52-9.11
MP-18 (Downgradient)	29-Dec-15	1018.28	< 0.05	39.1	2	< 0.1	168	42	7.16
	9-Mar-16	1017.58	0.06	58.2	2	< 0.1	272	53	7.11
	26-May-16	1017.18	< 0.05	50.4	2	0.1	222	46	7.58
	18-Aug-16	1015.43	< 0.05	21.5	2	< 0.1	116	31	7.01
	28-Nov-16	1016.43	< 0.05	54.0	2	< 0.1	236	46	7.12
	2-Mar-17	1017.18	< 0.05	42.5	2	< 0.1	188	45	7.95
	30-May-17	1018.18	< 0.05	40.0	2	< 0.1	180	45	6.97
	24-Aug-17	1016.08	< 0.05	45.8	2	< 0.1	186	48	6.63
	9-Oct-17	1015.18	< 0.05	25.5	2	< 0.1	144	29	7.35
	9-May-18	1017.58	0.07	42.2	2	< 0.1	282	45	7.63
	12-Nov-18	1017.88	< 0.05	44.5	1	< 0.1	200	43	8.04
	21-May-19	1017.48	< 0.05	57.8	2	< 0.1	242	53	6.63
	15-Aug-19	1016.28	< 0.05	66.7	1	< 0.1	246	54	7.11
	21-Nov-19	1015.63	< 0.05	36.2	2	< 0.1	146	36	7.03
	20-Feb-20	1017.25	< 0.05	45.2	2	< 0.1	220	48	7.26
	21-May-20	1016.91	< 0.05	52.0	2	< 0.1	212	51	7.20
	23-Nov-20	------	Insufficient water in well due to seasonal conditions; could not be sampled.						
	24-May-21	1016.83	< 0.05	53.1	2	< 0.1	242	53	7.01
	18-Nov-21	1016.10	< 0.05	18.3	1	< 0.1	90	32	6.29
	19-May-22	1017.10	< 0.05	48.5	2	< 0.1	218	50	6.82
	14-Nov-22	1016.17	< 0.05	17.6	< 1	< 0.1	82	33	6.65

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 Aug. 2017) of groundwater sampling data for Well MP-21.

Table 4
Keystone Generating Station
East Valley 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	0.007	0.42	0.001	0.002	0.01	0.005	0.3	0.001	0.01	0.0002	0.02	0.001	0.0002	8.85
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	RSL	MCL	RSL	RSL	MCL	RSL	MCL	MCL	Background
		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	8.85
MP-21 (Upgradient)	28-Dec-15	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.98
	8-Mar-16	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.33
	31-May-16	< 0.001	0.002	0.18	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.25
	22-Aug-16	< 0.001	< 0.001	0.12	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.43
	8-Nov-16	< 0.001	0.007	0.27	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	2.58
	6-Mar-17	< 0.001	< 0.001	0.14	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.51
	31-May-17	< 0.001	< 0.001	0.12	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.65
	28-Aug-17	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.09
	26-Mar-18	< 0.001	0.003	0.21	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.50
	16-May-18	Not Analyzed	0.018	0.69	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	8.84
	7-Nov-18	Not Analyzed	0.081	3.15	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	24.6
	7-May-19	< 0.001	0.072	2.47	0.001	0.013	< 0.01	< 0.005	0.3	0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	20.5
	4-Sep-19	Not Analyzed	0.053	1.38	< 0.001	< 0.002	Not Analyzed	< 0.005	0.2	< 0.001	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	21.0
	4-Nov-19	Not Analyzed	< 0.100	9.25	< 0.01	< 0.02	Not Analyzed	< 0.050	0.2	< 0.100	< 0.10	Not Analyzed	Not Analyzed	< 0.100	Not Analyzed	31.5
	24-Feb-20	< 0.001	0.012	0.48	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	6.37
	21-May-20	Not Analyzed	0.048	1.74	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	29.3
	23-Nov-20	Not Analyzed	0.016	0.73	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	5.73
	25-May-21	< 0.001	0.010	0.52	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	21.8
	22-Nov-21	< 0.001	0.017	0.83	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	20.9
	23-May-22	< 0.001	0.090	5.41	0.003	0.008	0.01	0.006	0.1	0.008	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	3.21
	14-Nov-22	< 0.001	< 0.001	0.15	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.30
MP-4 (Downgradient)	29-Dec-15	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.02
	9-Mar-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	0.43
	25-May-16	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.65
	23-Aug-16	< 0.001	< 0.001	0.14	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.92
	28-Nov-16	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.001	< 0.0002	0.52
	7-Mar-17	< 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	0.64
	23-May-17	< 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	1.72
	23-Aug-17	< 0.001	< 0.001	0.14	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.90
	27-Mar-18	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.49
	14-May-18	Not Analyzed	< 0.001	0.09	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.57
	31-Oct-18	Not Analyzed	< 0.001	0.12	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.04
	16-May-19	< 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	0.59
	15-Aug-19	Not Analyzed	< 0.001	0.16	< 0.001	< 0.002	Not Analyzed	< 0.005	< 0.1	< 0.001	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.01
	21-Nov-19	Not Analyzed	< 0.001	0.12	< 0.001	< 0.002	Not Analyzed	< 0.005	< 0.1	< 0.001	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	-0.08
	20-Feb-20	< 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	0.65
	21-May-20	Not Analyzed	< 0.001	0.10	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.27
	19-Nov-20	Not Analyzed	< 0.001	0.09	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	-0.07
	24-May-21	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.26
	18-Nov-21	< 0.001	< 0.001	0.14	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.34
	19-May-22	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0004	< 0.02	< 0.001	< 0.0002	0.43
	10-Nov-22	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.10

See notes at end of table.

Table 4
Keystone Generating Station
East Valley 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	0.007	0.42	0.001	0.002	0.01	0.005	0.3	0.001	0.01	0.0002	0.02	0.001	0.0002	8.85
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	RSL	MCL	RSL	RSL	MCL	RSL	MCL	MCL	Background
		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	8.85
MP-17B (Downgradient)	29-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	-0.97
	10-Mar-16	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.03
	1-Jun-16	< 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	1.19
	18-Aug-16	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.39
	29-Nov-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	1.22
	2-Mar-17	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	-0.15
	30-May-17	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.34
	23-Aug-17	< 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	0.40
	20-Mar-18	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.67
	9-May-18	Not Analyzed	< 0.001	0.08	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.35
	31-Oct-18	Not Analyzed	< 0.001	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.60
	16-May-19	< 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	1.07
	15-Aug-19	Not Analyzed	< 0.001	0.08	< 0.001	< 0.002	Not Analyzed	< 0.005	< 0.1	< 0.001	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.47
	19-Nov-19	Not Analyzed	< 0.001	0.08	< 0.001	< 0.002	Not Analyzed	< 0.005	0.1	< 0.001	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.09
	24-Feb-20	< 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	0.84
	21-May-20	Not Analyzed	< 0.001	0.08	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.59
	23-Nov-20	Not Analyzed	< 0.001	0.08	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.56
	24-May-21	< 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	-0.28
	18-Nov-21	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.68
	19-May-22	< 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	0.31
	14-Nov-22	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.69
MP-18 (Downgradient)	29-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	0.20
	9-Mar-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	0.005	< 0.0002	-0.03
	26-May-16	< 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	0.75
	18-Aug-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	0.18
	28-Nov-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	1.08
	2-Mar-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	0.03
	30-May-17	< 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	0.22
	24-Aug-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	0.91
	20-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	0.07
	9-May-18	Not Analyzed	< 0.001	0.06	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.23
	12-Nov-18	Not Analyzed	< 0.001	0.06	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.65
	21-May-19	< 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	0.95
	15-Aug-19	Not Analyzed	< 0.001	0.09	< 0.001	< 0.002	Not Analyzed	< 0.005	< 0.1	< 0.001	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.71
	21-Nov-19	Not Analyzed	< 0.001	0.06	< 0.001	< 0.002	Not Analyzed	< 0.005	< 0.1	< 0.001	Not Analyzed	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.59
	20-Feb-20	< 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	0.01
	21-May-20	Not Analyzed	< 0.001	0.07	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.43
	23-Nov-20	Insufficient water in well due to seasonal conditions; could not be sampled.														
	24-May-21	< 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	-0.10
	18-Nov-21	< 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	0.21
	19-May-22	< 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	0.69
	14-Nov-22	< 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	1.69

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 Aug. 2017) of groundwater sampling data for Well MP-21.
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 5
Keystone Generating Station
West Valley 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						
			0.08	47.8	3.8	0.3	222	15	6.52-9.11
MP-21 (Upgradient)	28-Dec-15	1069.20	< 0.05	38.0	2	0.2	204	15	7.85
	8-Mar-16	1069.15	0.05	40.5	2	0.2	210	15	7.86
	31-May-16	1072.00	0.08	42.5	1	0.2	202	14	7.37
	22-Aug-16	1066.55	0.06	39.0	1	0.2	206	14	7.50
	8-Nov-16	1068.50	0.05	42.3	3	0.2	198	15	8.28
	6-Mar-17	1068.06	0.06	40.3	2	0.2	198	13	7.32
	31-May-17	1068.60	< 0.05	37.0	2	0.2	192	15	7.27
	28-Aug-17	1066.80	0.05	39.6	2	0.2	204	15	8.30
	10-Oct-17	1066.20	0.05	41.4	2	0.2	200	15	7.68
	16-May-18	1069.00	< 0.05	43.6	2	0.2	196	16	7.79
	7-Nov-18	1068.40	0.17	70.9	2	0.2	228	15	8.97
	7-May-19	1067.70	< 0.05	64.6	2	0.3	204	15	7.55
	4-Sep-19	1065.85	0.13	49.3	2	0.2	204	17	7.53
	4-Nov-19	1065.90	< 0.50	129	2	0.2	168	16	7.77
	24-Feb-20	1067.67	0.06	46.9	2	0.3	200	16	7.47
	21-May-20	1067.02	0.05	55.2	2	0.2	190	16	7.77
	23-Nov-20	1063.13	0.05	41.5	2	0.2	212	15	7.31
	25-May-21	1065.99	0.06	43.3	2	0.2	190	14	7.48
	22-Nov-21	1062.87	0.06	44.4	2	0.3	202	16	7.48
	23-May-22	1065.78	0.07	90.9	2	0.1	180	14	7.39
	14-Nov-22	1063.88	0.05	39.5	2	0.2	178	16	7.44
MP-16 (Downgradient)	30-Dec-15	1051.40	0.08	45.4	25	0.2	226	9	7.52
	7-Mar-16	1051.05	< 0.05	45.0	26	0.2	230	9	7.65
	26-May-16	1051.05	< 0.05	43.6	26	0.3	228	4	7.25
	25-Aug-16	1050.45	0.11	39.8	27	0.2	230	8	8.05
	30-Nov-16	1051.25	0.06	39.9	25	0.2	224	7	7.29
	23-Feb-17	1050.75	0.07	37.1	25	0.2	204	8	8.18
	24-May-17	1051.50	0.07	35.5	25	0.2	200	8	7.15
	29-Aug-17	1051.10	0.07	37.0	29	0.1	212	7	7.11
	5-Oct-17	1050.65	0.06	37.9	28	0.2	208	8	7.59
	10-May-18	1052.15	0.07	35.0	27	0.2	210	8	7.76
	8-Nov-18	1052.85	0.05	36.9	29	0.2	220	8	8.36
	1-May-19	1052.35	0.07	37.2	34	0.2	198	9	7.56
	14-Aug-19	1051.45	0.08	42.9	39	0.2	218	8	7.48
	18-Nov-19	1051.85	< 0.05	37.3	38	0.2	206	8	7.47
	24-Feb-20	1050.65	0.06	42.9	41	0.3	210	8	7.45
	3-Jun-20	1049.81	0.09	37.3	38	0.2	214	9	7.33
	23-Nov-20	1048.30	0.06	35.5	39	0.2	224	9	7.39
	24-May-21	1050.89	0.06	37.1	35	0.3	220	10	7.45
	18-Nov-21	1051.14	0.06	37.7	36	0.2	204	8	7.27
	19-May-22	1052.20	< 0.05	36.0	38	< 0.1	192	9	7.19
	14-Nov-22	1052.00	< 0.05	38.8	41	0.2	186	7	7.20

See notes at end of table.

Table 5
Keystone Generating Station
West Valley 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						
			0.08	47.8	3.8	0.3	222	15	6.52-9.11
MP-23 (Downgradient)	23-Dec-15	1061.14	< 0.05	40.7	70	0.1	298	54	6.17
	7-Mar-16	1061.14	< 0.05	44.8	72	< 0.1	264	54	6.17
	25-May-16	1060.44	< 0.05	43.1	68	0.1	334	48	5.92
	23-Aug-16	1058.04	< 0.05	50.9	96	< 0.1	496	46	5.99
	29-Nov-16	1059.74	< 0.05	47.8	85	< 0.1	272	48	6.02
	28-Feb-17	1059.84	< 0.05	45.7	91	0.1	262	52	6.98
	24-May-17	1060.54	< 0.05	45.1	91	< 0.1	344	56	5.63
	24-Aug-17	1059.34	< 0.05	46.8	101	< 0.1	354	58	5.59
	11-Oct-17	1058.14	< 0.05	53.9	106	< 0.1	452	51	6.02
	10-May-18	1060.94	< 0.05	47.1	93	< 0.1	370	56	6.65
	8-Nov-18	1061.94	< 0.05	44.3	87	< 0.1	314	61	7.08
	16-May-19	1062.59	0.07	46.4	76	< 0.1	280	60	6.46
	14-Aug-19	1059.74	< 0.05	50.7	90	< 0.1	430	62	6.04
	21-Nov-19	1059.74	< 0.05	51.5	99	0.1	326	58	6.17
	24-Feb-20	1061.65	< 0.05	58.2	100	0.1	304	62	6.14
	2-Jun-20	1060.63	< 0.05	49.2	100	< 0.1	376	62	6.04
	19-Nov-20	1060.00	< 0.05	64.3	148	0.1	426	64	6.03
	24-May-21	1060.57	< 0.05	51.4	114	< 0.1	382	67	6.05
	22-Nov-21	1059.73	< 0.05	57.1	136	< 0.1	1340	62	5.91
	23-May-22	1060.62	< 0.05	48.8	107	< 0.1	330	66	6.09
	10-Nov-22	1059.16	< 0.05	49.8	108	< 0.1	332	60	5.98
MP-24 (Downgradient)	28-Dec-15	1081.26	< 0.05	19.3	3	0.1	108	13	6.75
	8-Mar-16	1076.76	< 0.05	28.9	4	0.1	152	14	6.85
	31-May-16	1069.26	0.06	19.3	2	< 0.1	100	13	6.51
	22-Aug-16	1054.96	< 0.05	24.8	2	0.1	124	11	6.71
	8-Nov-16	1071.36	< 0.05	37.0	2	0.1	154	13	7.60
	6-Mar-17	1076.16	< 0.05	39.6	2	0.1	166	12	6.82
	31-May-17	1079.46	< 0.05	31.0	2	0.1	128	10	6.61
	28-Aug-17	1053.76	< 0.05	46.0	2	0.2	176	10	7.92
	10-Oct-17	1051.16	< 0.05	44.7	2	0.2	172	10	7.20
	16-May-18	1078.16	< 0.05	43.7	2	0.2	190	10	7.50
	7-Nov-18	1076.56	< 0.05	44.5	2	0.1	204	9	8.35
	7-May-19	1075.56	< 0.05	43.8	1	0.1	168	9	7.07
	4-Sep-19	1060.96	< 0.05	41.6	1	0.1	182	9	7.08
	4-Nov-19	1074.61	< 0.05	45.0	2	0.1	164	8	7.03
	20-Feb-20	1076.45	0.06	41.8	2	0.2	186	8	7.28
	21-May-20	1072.18	< 0.05	44.7	2	0.1	168	8	7.25
	23-Nov-20	1058.09	< 0.05	37.7	2	0.2	196	8	7.20
	25-May-21	1063.33	< 0.05	45.4	2	0.2	172	10	7.11
	22-Nov-21	1058.86	< 0.05	44.7	2	0.2	198	10	7.03
	23-May-22	1054.36	< 0.05	47.0	2	0.2	186	9	6.97
	14-Nov-22	1047.24	< 0.05	45.3	< 1	0.2	178	9	7.11

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 Aug. 2017) of groundwater sampling data for Well MP-21.

Table 6
Keystone Generating Station
West Valley 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	0.007	0.42	0.001	0.002	0.01	0.005	0.3	0.001	0.01	0.0002	0.02	0.001	0.0002	8.85
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	RSL	MCL	RSL	RSL	MCL	RSL	MCL	MCL	Background
		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	8.85
MP-21 (Upgradient)	28-Dec-15	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.98
	8-Mar-16	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.33
	31-May-16	< 0.001	0.002	0.18	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.25
	22-Aug-16	< 0.001	< 0.001	0.12	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.43
	8-Nov-16	< 0.001	0.007	0.27	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	2.58
	6-Mar-17	< 0.001	< 0.001	0.14	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.51
	31-May-17	< 0.001	< 0.001	0.12	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.65
	28-Aug-17	< 0.001	< 0.001	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.09
	26-Mar-18	< 0.001	0.003	0.21	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.50
	16-May-18	Not Analyzed	0.018	0.69	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	8.84
	7-Nov-18	Not Analyzed	0.081	3.15	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	24.6
	7-May-19	< 0.001	0.072	2.47	0.001	0.013	< 0.01	< 0.005	0.3	0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	20.5
	4-Sep-19	Not Analyzed	0.053	1.38	< 0.001	< 0.002	Not Analyzed	< 0.005	0.2	< 0.001	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	21.0
	4-Nov-19	Not Analyzed	< 0.100	9.25	< 0.01	< 0.02	Not Analyzed	< 0.050	0.2	< 0.100	< 0.10	Not Analyzed	Not Analyzed	< 0.100	Not Analyzed	31.5
	24-Feb-20	< 0.001	0.012	0.48	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	6.37
	21-May-20	Not Analyzed	0.048	1.74	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	29.3
	23-Nov-20	Not Analyzed	0.016	0.73	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	5.73
	25-May-21	< 0.001	0.010	0.52	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	21.8
	22-Nov-21	< 0.001	0.017	0.83	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	20.9
	23-May-22	< 0.001	0.090	5.41	0.003	0.008	0.01	0.006	0.1	0.008	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	3.21
	14-Nov-22	< 0.001	< 0.001	0.15	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.30
MP-16 (Downgradient)	30-Dec-15	< 0.001	< 0.001	0.89	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.00
	7-Mar-16	< 0.001	< 0.001	0.90	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.93
	26-May-16	< 0.001	< 0.001	0.89	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.78
	25-Aug-16	< 0.001	< 0.001	0.86	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.28
	30-Nov-16	< 0.001	< 0.001	0.95	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.58
	23-Feb-17	< 0.001	< 0.001	0.92	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.22
	24-May-17	< 0.001	< 0.001	0.89	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.11
	29-Aug-17	< 0.001	< 0.001	0.76	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.13
	20-Mar-18	< 0.001	< 0.001	0.91	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.66
	10-May-18	Not Analyzed	< 0.001	0.82	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.31
	8-Nov-18	Not Analyzed	< 0.001	0.88	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	2.00
	1-May-19	< 0.001	< 0.001	0.83	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.48
	14-Aug-19	Not Analyzed	< 0.001	1.08	< 0.001	< 0.002	Not Analyzed	< 0.005	0.2	< 0.001	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.81
	18-Nov-19	Not Analyzed	< 0.001	1.13	< 0.001	< 0.002	Not Analyzed	< 0.005	0.2	< 0.001	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.17
	24-Feb-20	< 0.001	< 0.001	0.93	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.00
	3-Jun-20	Not Analyzed	< 0.001	0.90	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.28
	23-Nov-20	Not Analyzed	< 0.001	0.82	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.57
	24-May-21	< 0.001	< 0.001	0.93	< 0.001	< 0.002	< 0.01	< 0.005	0.3	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.11
	18-Nov-21	< 0.001	< 0.001	0.88	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.24
	19-May-22	< 0.001	< 0.001	0.88	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.88
	14-Nov-22	< 0.001	< 0.001	1.03	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.17

See notes at end of table.

Table 6
Keystone Generating Station
West Valley 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	0.007	0.42	0.001	0.002	0.01	0.005	0.3	0.001	0.01	0.0002	0.02	0.001	0.0002	8.85
		Groundwater Protection Standard														
		MCL	MCL	MCL	MCL	MCL	MCL	RSL	MCL	RSL	RSL	MCL	RSL	MCL	MCL	Background
		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	8.85
MP-23 (Downgradient)	23-Dec-15	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.01	< 0.0002	< 0.02	0.001	< 0.0002	0.56
	7-Mar-16	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	0.001	< 0.0002	1.07
	25-May-16	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.01	< 0.0002	< 0.02	0.001	< 0.0002	1.03
	23-Aug-16	< 0.001	< 0.001	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.95
	29-Nov-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	-0.13
	28-Feb-17	< 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	-0.07
	24-May-17	< 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	0.88
	24-Aug-17	< 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	0.47
	15-Mar-18	< 0.001	< 0.001	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.23
	10-May-18	Not Analyzed	< 0.001	0.13	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	0.02	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	-0.04
	8-Nov-18	Not Analyzed	< 0.001	0.10	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.62
	16-May-19	< 0.001	< 0.001	0.09	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	0.001	< 0.0002	0.48
	14-Aug-19	Not Analyzed	< 0.001	0.11	< 0.001	< 0.002	Not Analyzed	< 0.005	< 0.1	< 0.001	0.01	Not Analyzed	Not Analyzed	0.001	Not Analyzed	0.80
	23-Nov-19	Not Analyzed	< 0.001	0.11	< 0.001	< 0.002	Not Analyzed	< 0.005	0.1	< 0.001	0.01	Not Analyzed	Not Analyzed	0.001	Not Analyzed	0.37
	24-Feb-20	< 0.001	< 0.001	0.11	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.02	< 0.0002	< 0.02	0.001	< 0.0002	0.71
	2-Jun-20	Not Analyzed	< 0.001	0.11	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	< 0.1	Not Analyzed	0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.12
	19-Nov-20	Not Analyzed	< 0.001	0.13	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.09
	24-May-21	< 0.001	< 0.001	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.80
	22-Nov-21	< 0.001	< 0.001	0.12	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.02	< 0.0002	< 0.02	< 0.001	< 0.0002	0.53
	23-May-22	< 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	0.10
	10-Nov-22	< 0.001	< 0.001	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.06
MP-24 (Downgradient)	28-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	0.86
	8-Mar-16	< 0.001	< 0.001	0.30	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.56
	31-May-16	< 0.001	< 0.001	0.21	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.61
	22-Aug-16	< 0.001	< 0.001	0.12	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.33
	8-Nov-16	< 0.001	< 0.001	0.46	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.87
	6-Mar-17	< 0.001	< 0.001	0.49	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.83
	31-May-17	< 0.001	< 0.001	0.43	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.89
	28-Aug-17	< 0.001	< 0.001	0.61	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.16
	26-Mar-18	< 0.001	< 0.001	0.44	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.78
	16-May-18	Not Analyzed	< 0.001	0.69	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.65
	7-Nov-18	Not Analyzed	< 0.001	0.71	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	1.18
	7-May-19	< 0.001	< 0.001	0.78	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.91
	4-Sep-19	Not Analyzed	< 0.001	0.82	< 0.001	< 0.002	Not Analyzed	< 0.005	0.1	< 0.001	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.16
	4-Nov-19	Not Analyzed	< 0.001	0.84	< 0.001	< 0.002	Not Analyzed	< 0.005	0.1	< 0.001	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	-0.06
	20-Feb-20	< 0.001	< 0.001	0.79	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.57
	21-May-20	Not Analyzed	< 0.001	0.84	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.1	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	0.54
	23-Nov-20	Not Analyzed	< 0.001	0.77	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	0.2	Not Analyzed	< 0.01	Not Analyzed	Not Analyzed	< 0.001	Not Analyzed	1.29
	25-May-21	< 0.001	< 0.001	0.88	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.32
	22-Nov-21	< 0.001	< 0.001	0.88	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.67
	23-May-22	< 0.001	< 0.001	0.90	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.32
	14-Nov-22	< 0.001	< 0.001	0.92	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.88

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 Aug. 2017) of groundwater sampling data for Well MP-21.
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	11/30/22	--	E. Schlegel	D. Shott	--	631015097-B1

LEGEND:

MW-5 (1007.47) — CCR GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED ON NOVEMBER 15, 2022

GROUNDWATER GENERALIZED FLOW DIRECTION

SCALE

0 100 200 FEET

REFERENCES:

1. GOOGLE AERIAL PHOTOGRAPH, DATED 9/26/2019.

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

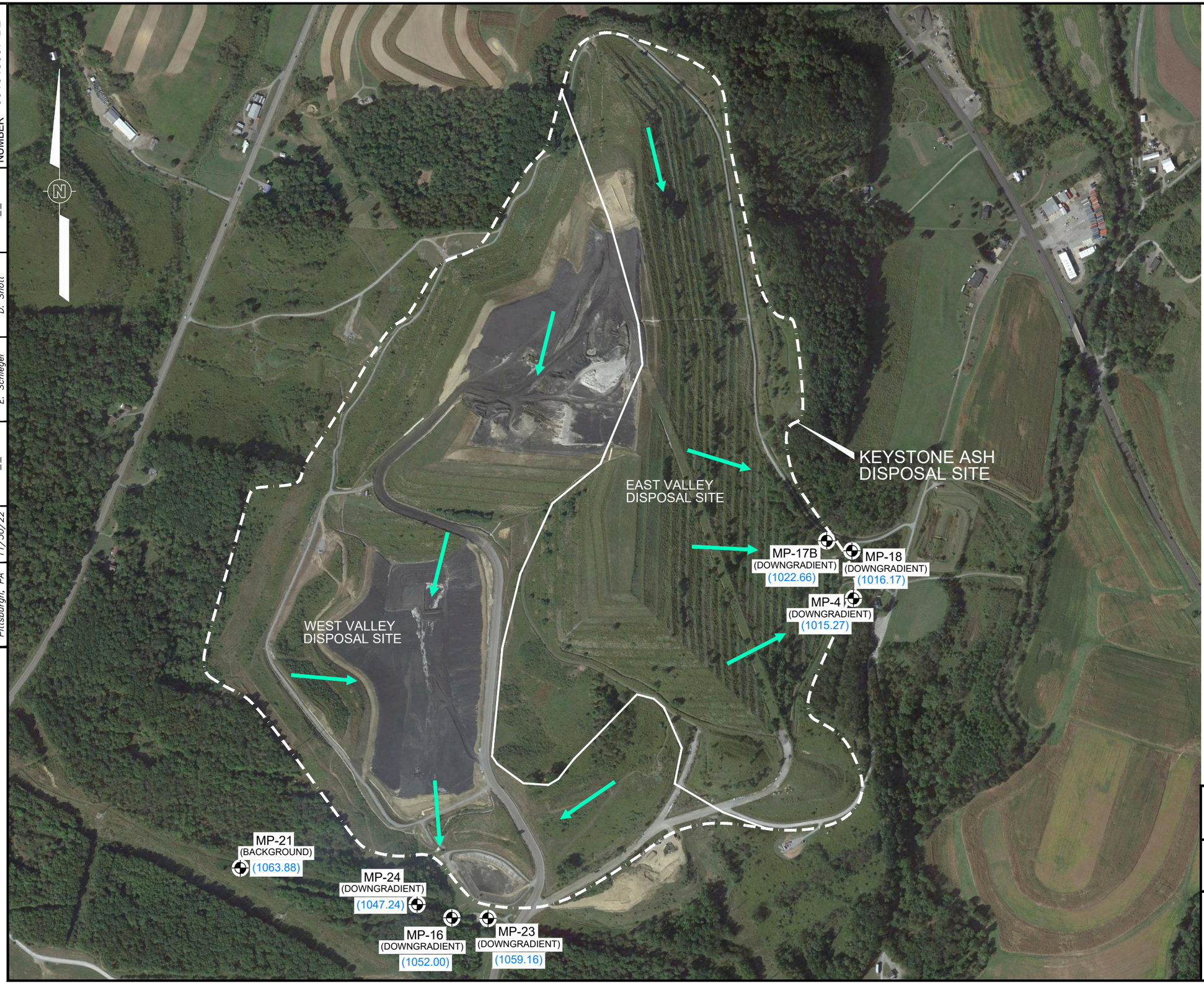
KEYSTONE STATION CAMS Consolidated Asset Management Services

FIGURE 1
CCR COMPLIANCE GROUNDWATER MONITORING WELL LOCATION MAP
ASH FILTER PONDS

KEYSTONE GENERATING STATION
PLUMCREEK TOWNSHIP, ARMSTRONG COUNTY, PA

File: O:\PROJECT\110870\631015097\631015097-B1.dwg
Plot Date/Time: Nov 30, 2022 - 12:25pm
Plotted By: Evan.Schlegel
Xref: Image

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	11/30/22	---	E. Schlegel	D. Shott	---	631015097-B2



LEGEND:

MP-18 (1016.17) CCR GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED BETWEEN NOVEMBER 10 AND NOVEMBER 14, 2022

GROUNDWATER GENERALIZED FLOW DIRECTION

SCALE

0 600 1,200 FEET

REFERENCES:

1. GOOGLE AERIAL PHOTOGRAPH, DATED 9/26/2019.

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

KEYSTONE STATION CAMS Consolidated Asset Management Services

FIGURE 2
CCR COMPLIANCE GROUNDWATER MONITORING WELL LOCATION MAP
EAST VALLEY AND WEST VALLEY ASH DISPOSAL SITES
KEYSTONE GENERATING STATION
PLUMCREEK TOWNSHIP, ARMSTRONG COUNTY, PA

File: O:\PROJECT_110870\Keystone\631015097\631015097-B2.dwg
Plot Date/Time: Nov 30, 2022 - 12:42pm
Plotted By: Evan.Schlegel
Xref:
Image