



**CCR COMPLIANCE  
GROUNDWATER MONITORING AND CORRECTIVE ACTION  
ANNUAL REPORT  
NORTH ASH POND AND ASH LANDFILL**

Prepared for:



NRG Power Midwest LP  
New Castle Generating Station  
West Pittsburg, Pennsylvania

Prepared by:

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**Table of Contents**

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List of Tables ..... iii

List of Figures ..... iii

1.0 Introduction ..... 1

2.0 North Ash Pond..... 3

    2.1 Groundwater Monitoring Network ..... 3

    2.2 2017 Data Collection ..... 3

    2.3 2017 Monitoring Program Transitions..... 3

    2.4 2017 Corrective Actions ..... 3

    2.5 2018 Projected Activities ..... 3

3.0 Ash Landfill ..... 5

    3.1 Groundwater Monitoring Network ..... 5

    3.2 2017 Data Collection ..... 5

    3.3 2017 Monitoring Program Transitions..... 5

    3.4 2017 Corrective Actions ..... 5

    3.5 2018 Projected Activities ..... 5

Tables

Figures

## *List of Tables*

---

Table 1	North Ash Pond Groundwater Analytical Data Summary—Appendix III Constituents
Table 2	North Ash Pond Groundwater Analytical Data Summary—Appendix IV Constituents
Table 3	Ash Landfill Groundwater Analytical Data Summary—Appendix III Constituents
Table 4	Ash Landfill Groundwater Analytical Data Summary—Appendix IV Constituents

## *List of Figures*

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Figure 1	North Ash Pond and Ash Landfill—Location and Groundwater Monitoring System Map
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## 1.0 Introduction

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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 must be completed no later than January 31, 2018, and provide 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:

- 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 New Castle Generating Station, operated by NRG Power Midwest LP, a subsidiary of GenOn Energy, Inc. (GenOn), is a coal-fired power plant located in West Pittsburg, 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 New Castle Plant Ash Landfill and the North Ash Pond; however, the management/placement of CCR materials in both units has been significantly curtailed since the transition from coal to natural gas firing was effected in mid-2016. 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.

In summary, this Annual Report has been prepared to comply with the requirements of §257.90(e), addressing each of the New Castle Station's CCR Units with respect to the groundwater monitoring and corrective actions undertaken during Calendar Year 2017. 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 North Ash Pond**

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### **2.1 Groundwater Monitoring Network**

The CCR groundwater monitoring system for the North Ash Pond is comprised of four wells, including Well MP-20 (upgradient), and Wells MP-21, MP-22, and MP-23 (downgradient). All of the wells are screened within the unconsolidated materials, wherein the uppermost aquifer exists. The locations of the wells are shown on the attached Figure 1, along with depiction of the generalized groundwater flow direction in the area of the pond. Each of these wells was already existing, and no new wells were added nor were any existing wells abandoned/replaced during the 2017 reporting period.

### **2.2 2017 Data Collection**

Per the requirements of §257.94(b), Detection Monitoring was ongoing throughout 2017, including activities to ensure the collection of a minimum of eight independent samples from each of the background/upgradient and downgradient wells associated with the North Ash Pond. These samples were analyzed for the necessary Appendix III and Appendix IV constituents, with the results summarized in the attached Tables 1 and 2, respectively. In addition, a ninth round of samples was collected (October 9, 2017) and analyzed for Appendix III constituents only. The results from these samples (also shown in Table 1) will serve as the first point of comparison to determine if concentrations in any of the downgradient wells are at levels representing a statistically significant increase (SSI) over the background concentrations established in the upgradient well(s).

### **2.3 2017 Monitoring Program Transitions**

During 2017, there were no transitions between monitoring programs. Only activities in support of the Detection Monitoring program were conducted.

### **2.4 2017 Corrective Actions**

During 2017, there were no problems identified or corrective actions undertaken.

### **2.5 2018 Projected Activities**

No later than January 15, 2018, the results from the ninth round of Detection Monitoring sampling will be reviewed against the Appendix III background concentrations and preliminary identification of any SSIs completed. If SSIs are identified, subsequent activities could include performance of an Alternate Source Demonstration [per §257.94(e)(2)] to potentially negate the SSIs (and remain in Detection Monitoring), and/or entry into the Assessment Monitoring program [per §257.94(e)(1)] should the SSIs be deemed valid. Completion of the Alternate Source

Demonstration or entry into the Assessment Monitoring program must be accomplished within 90 days, or no later than April 15, 2018.

## **3.0 Ash Landfill**

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### **3.1 Groundwater Monitoring Network**

The CCR groundwater monitoring system for the Ash Landfill is comprised of six wells, including Wells MP-11 and P-6 (upgradient), and Wells MP-10R, MP-12, MP-15, and MP-18 (downgradient). All of the wells are screened within the unconsolidated materials, wherein the uppermost aquifer exists. The locations of the wells are shown on Figure 1 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 2017 reporting period.

### **3.2 2017 Data Collection**

Per the requirements of §257.94(b), Detection Monitoring was ongoing throughout 2017, including activities to ensure the collection of a minimum of eight independent samples from each of the background/upgradient and downgradient wells associated with the Ash Landfill. These samples were analyzed for the necessary Appendix III and Appendix IV constituents, with the results summarized in the attached Tables 3 and 4, respectively. In addition, a ninth round of samples was collected (October 9-10, 2017) and analyzed for Appendix III constituents only. The results from these samples (also shown in Table 3) will serve as the first point of comparison to determine if concentrations in any of the downgradient wells are at levels representing an SSI over the background concentrations established in the upgradient well(s).

### **3.3 2017 Monitoring Program Transitions**

During 2017, there were no transitions between monitoring programs. Only activities in support of the Detection Monitoring program were conducted.

### **3.4 2017 Corrective Actions**

During 2017, there were no problems identified or corrective actions undertaken.

### **3.5 2018 Projected Activities**

No later than January 15, 2018, the results from the ninth round of Detection Monitoring sampling will be reviewed against the Appendix III background concentrations and preliminary identification of any SSIs completed. If SSIs are identified, subsequent activities could include performance of an Alternate Source Demonstration [per §257.94(e)(2)] to potentially negate the SSIs (and remain in Detection Monitoring), and/or entry into the Assessment Monitoring program [per §257.94(e)(1)] should the SSIs be deemed valid. Completion of the Alternate Source Demonstration or entry into the Assessment Monitoring program must be accomplished within 90 days, or no later than April 15, 2018.



*Tables*

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**Table 1**  
**New Castle Generating Station**  
**North Ash Pond--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.)
MP-20 (Upgradient)	29-Dec-15	766.13	1.81	506	30	< 0.5	2340	1390	6.72
	2-Mar-16	766.55	1.68	606	28	< 0.1	2260	1190	6.77
	2-Jun-16	766.13	1.38	452	28	< 0.1	2310	1100	6.62
	8-Sep-16	763.41	1.53	511	26	0.1	2230	1150	6.68
	1-Dec-16	764.11	1.73	500	25	< 0.1	2160	1050	6.79
	2-Mar-17	766.95	2.13	572	27	< 0.1	2320	1330	6.72
	31-May-17	768.15	2.23	570	27	< 0.2	2520	1270	6.57
	30-Aug-17	765.05	2.39	586	26	< 0.1	2530	1150	6.66
9-Oct-17	764.22	2.39	583	22	< 0.1	2590	1080	6.69	
MP-21 (Downgradient)	29-Dec-15	765.68	1.66	473	34	< 0.5	2260	1260	6.68
	2-Mar-16	766.09	1.64	527	31	< 0.1	2160	1150	6.69
	2-Jun-16	765.63	1.52	456	30	< 0.1	2450	1210	6.53
	8-Sep-16	762.86	1.59	477	29	0.2	2300	1220	6.56
	1-Dec-16	763.54	1.77	529	27	< 0.1	2210	1060	6.66
	2-Mar-17	766.53	< 0.05	489	30	0.1	2210	1230	6.85
	1-Jun-17	767.65	1.67	525	32	< 0.2	2270	1220	6.52
	30-Aug-17	764.62	1.71	510	31	< 0.1	2310	1070	6.59
9-Oct-17	763.81	1.72	467	27	< 0.1	2360	959	6.69	
MP-22 (Downgradient)	29-Dec-15	764.41	1.38	387	34	< 0.5	1650	761	6.76
	2-Mar-16	764.59	1.41	388	34	< 0.1	1620	816	6.72
	2-Jun-16	763.89	1.27	336	33	< 0.1	1700	801	6.54
	8-Sep-16	761.33	1.39	404	32	0.1	1750	845	6.57
	1-Dec-16	761.92	1.32	409	31	< 0.1	1710	798	6.62
	2-Mar-17	765.03	1.45	381	33	0.1	1710	868	6.63
	1-Jun-17	766.06	1.39	436	35	< 0.2	1790	915	6.47
	30-Aug-17	763.17	1.44	429	33	< 0.1	1860	832	6.66
9-Oct-17	762.42	1.50	411	31	< 0.1	1990	840	6.55	
MP-23 (Downgradient)	29-Dec-15	759.66	0.78	408	59	< 0.5	1740	1060	6.72
	2-Mar-16	754.89	0.81	436	50	< 0.1	1710	999	6.70
	2-Jun-16	754.80	0.73	357	47	0.1	1790	981	6.49
	8-Sep-16	750.96	0.82	397	48	0.5	1630	873	6.53
	1-Dec-16	753.21	0.74	371	52	0.1	1430	815	6.61
	2-Mar-17	761.40	0.80	334	48	0.2	1350	702	6.77
	1-Jun-17	762.92	0.77	361	55	< 0.2	1360	769	6.56
	30-Aug-17	760.38	0.72	297	54	< 0.1	1290	595	6.92
9-Oct-17	760.36	0.68	278	52	0.1	1270	563	6.72	

     = Data to be compared against calculated Background values from the upgradient well.

**Table 2**  
**New Castle Generating Station**  
**North Ash Pond--Groundwater Baseline 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)
MP-20 (Upgradient)	29-Dec-15	< 0.001	0.016	0.07	< 0.001	< 0.002	< 0.01	< 0.005	< 0.5	< 0.001	0.18	< 0.0002	< 0.02	< 0.001	< 0.0002	1.35
	2-Mar-16	< 0.001	0.018	0.06	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.16	< 0.0002	< 0.02	< 0.001	< 0.0002	1.29
	2-Jun-16	< 0.001	0.019	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.13	< 0.0002	< 0.02	< 0.001	< 0.0002	1.56
	8-Sep-16	< 0.001	0.020	0.06	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.14	< 0.0002	< 0.02	< 0.001	< 0.0002	2.77
	1-Dec-16	< 0.001	0.018	0.07	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.15	< 0.0002	< 0.02	< 0.001	< 0.0002	1.20
	2-Mar-17	< 0.001	0.018	0.08	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.23	< 0.0002	< 0.02	< 0.001	< 0.0002	0.08
	31-May-17	< 0.001	0.018	0.07	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.2	< 0.001	0.24	< 0.0002	< 0.02	< 0.001	< 0.0002	2.18
30-Aug-17	< 0.001	0.019	0.07	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.25	< 0.0002	< 0.02	< 0.001	< 0.0002	2.39	
MP-21 (Downgradient)	29-Dec-15	< 0.001	0.079	0.12	< 0.001	< 0.002	< 0.01	< 0.005	< 0.5	< 0.001	0.08	< 0.0002	< 0.02	< 0.001	< 0.0002	1.12
	2-Mar-16	< 0.001	0.080	0.13	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.08	< 0.0002	< 0.02	< 0.001	< 0.0002	1.92
	2-Jun-16	< 0.001	0.091	0.12	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.08	< 0.0002	< 0.02	< 0.001	< 0.0002	2.27
	8-Sep-16	< 0.001	0.084	0.13	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	0.09	< 0.0002	< 0.02	< 0.001	< 0.0002	3.19
	1-Dec-16	< 0.001	0.085	0.13	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.09	< 0.0002	< 0.02	< 0.001	< 0.0002	1.15
	2-Mar-17	< 0.001	0.083	0.12	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	0.09	< 0.0002	< 0.02	< 0.001	< 0.0002	1.10
	1-Jun-17	< 0.001	0.081	0.12	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.2	< 0.001	0.09	< 0.0002	< 0.02	< 0.001	< 0.0002	1.88
30-Aug-17	< 0.001	0.088	0.11	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.09	< 0.0002	< 0.02	< 0.001	< 0.0002	3.11	
MP-22 (Downgradient)	29-Dec-15	< 0.001	0.045	0.07	< 0.001	< 0.002	< 0.01	< 0.005	< 0.5	< 0.001	0.04	< 0.0002	< 0.02	< 0.001	< 0.0002	0.64
	2-Mar-16	< 0.001	0.058	0.06	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	1.24
	2-Jun-16	< 0.001	0.074	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	1.66
	8-Sep-16	< 0.001	0.078	0.05	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.04	< 0.0002	< 0.02	< 0.001	< 0.0002	2.85
	1-Dec-16	< 0.001	0.086	0.05	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	1.08
	2-Mar-17	< 0.001	0.079	0.05	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	1.96
	1-Jun-17	< 0.001	0.082	0.05	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.2	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	1.26
30-Aug-17	< 0.001	0.088	0.04	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.03	< 0.0002	< 0.02	< 0.001	< 0.0002	4.24	
MP-23 (Downgradient)	29-Dec-15	< 0.001	0.068	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.5	< 0.001	0.12	< 0.0002	< 0.02	< 0.001	< 0.0002	0.35
	2-Mar-16	< 0.001	0.069	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.12	< 0.0002	< 0.02	< 0.001	< 0.0002	2.72
	2-Jun-16	< 0.001	0.079	0.02	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.10	< 0.0002	< 0.02	< 0.001	< 0.0002	2.10
	8-Sep-16	< 0.001	0.069	0.02	< 0.001	< 0.002	< 0.01	< 0.005	0.5	< 0.001	0.11	< 0.0002	< 0.02	< 0.001	< 0.0002	3.20
	1-Dec-16	< 0.001	0.070	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	0.10	< 0.0002	< 0.02	< 0.001	< 0.0002	0.98
	2-Mar-17	< 0.001	0.066	0.03	< 0.001	< 0.0002	< 0.01	< 0.005	0.2	< 0.001	0.10	< 0.0002	< 0.02	< 0.001	< 0.0002	0.36
	1-Jun-17	< 0.001	0.070	0.03	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.2	< 0.001	0.10	< 0.0002	< 0.02	< 0.001	< 0.0002	1.75
30-Aug-17	< 0.001	0.067	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	0.09	< 0.0002	< 0.02	< 0.001	< 0.0002	2.43	

**Table 3**  
**New Castle Generating Station**  
**Ash Landfill--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.)
MP-11 (Upgradient)	30-Dec-15	776.93	0.05	146	36	< 0.1	922	425	7.47
	1-Mar-16	778.21	0.09	173	31	< 0.1	842	410	7.39
	1-Jun-16	777.77	0.15	178	27	< 0.1	890	385	7.29
	7-Sep-16	776.00	0.07	169	33	0.1	980	380	7.33
	30-Nov-16	776.24	0.08	167	33	0.1	872	390	7.43
	1-Mar-17	778.54	0.34	187	26	< 0.1	880	371	7.35
	31-May-17	778.75	0.09	192	25	0.1	838	381	7.03
	29-Aug-17	776.66	0.08	178	48	0.1	916	408	7.11
10-Oct-17	776.06	0.07	178	39	< 0.1	916	392	6.90	
P-6 (Upgradient)	30-Dec-15	777.39	0.11	126	19	< 0.1	622	297	6.69
	1-Mar-16	777.65	0.13	146	26	< 0.1	602	322	6.65
	1-Jun-16	777.93	0.11	129	19	< 0.1	618	302	6.63
	7-Sep-16	776.38	0.12	136	21	< 0.1	620	306	6.58
	30-Nov-16	776.97	0.12	141	19	< 0.1	614	297	6.56
	1-Mar-17	778.64	0.12	135	20	< 0.1	614	305	6.60
	31-May-17	778.64	0.11	146	22	< 0.1	606	316	6.42
	29-Aug-17	777.17	0.12	138	22	< 0.1	644	327	6.52
10-Oct-17	776.67	0.12	139	21	< 0.1	620	320	6.62	
MP-10R (Downgradient)	30-Dec-15	768.89	9.62	294	24	< 0.1	1650	853	6.02
	1-Mar-16	769.63	9.55	330	26	< 0.1	1510	784	6.14
	1-Jun-16	768.79	7.95	226	20	< 0.1	1250	609	5.90
	7-Sep-16	764.97	10.9	352	31	< 0.1	1730	817	6.05
	30-Nov-16	766.49	12.7	330	34	< 0.1	1670	824	6.10
	1-Mar-17	769.79	12.1	285	37	< 0.1	1450	797	6.17
	31-May-17	770.70	5.47	212	23	< 0.1	1010	474	6.01
	29-Aug-17	766.48	10.1	254	27	< 0.1	1300	625	6.06
10-Oct-17	765.37	12.5	296	31	< 0.1	1550	742	6.10	
MP-12 (Downgradient)	30-Dec-15	772.05	4.96	573	14	< 0.5	4320	2560	6.61
	1-Mar-16	772.56	4.38	594	11	< 1.0	3640	1970	6.55
	1-Jun-16	772.38	3.63	482	11	< 1.0	3780	2140	6.54
	7-Sep-16	769.74	5.35	600	14	< 1	4420	2490	6.50
	30-Nov-16	770.29	4.32	600	12	< 0.5	4030	1950	6.53
	1-Mar-17	772.65	4.19	582	16	0.2	4040	2380	6.60
	31-May-17	773.85	2.59	569	14	< 0.2	3300	1780	6.18
	29-Aug-17	771.16	3.94	589	18	< 0.5	4600	2760	6.31
10-Oct-17	770.36	4.43	585	14	< 0.1	4490	1920	6.38	
MP-15 (Downgradient)	30-Dec-15	773.86	1.13	638	7	< 0.1	2340	1150	6.68
	2-Mar-16	775.04	1.25	761	6	< 0.1	2310	1230	6.73
	2-Jun-16	773.54	1.22	645	6	< 0.1	2390	1180	6.62
	7-Sep-16	770.57	1.13	643	5	< 0.1	2320	1120	6.53
	30-Nov-16	772.62	1.06	585	6	< 0.1	2190	1060	6.61
	1-Mar-17	775.78	1.20	670	7	< 0.1	2290	1210	6.48
	31-May-17	775.86	1.30	669	8	< 0.2	2420	1120	6.49
	29-Aug-17	771.62	1.12	627	6	< 0.2	2280	1130	6.41
9-Oct-17	771.11	1.09	620	5	< 0.1	2310	990	6.54	
MP-18 (Downgradient)	30-Dec-15	769.18	1.03	124	10	0.2	536	98	6.75
	1-Mar-16	769.56	1.03	87	4	0.1	336	53	6.49
	1-Jun-16	768.74	0.99	137	10	< 0.2	580	91	6.82
	7-Sep-16	765.28	1.04	149	14	0.2	606	115	6.74
	30-Nov-16	767.26	1.18	134	15	0.2	512	80	6.55
	1-Mar-17	770.51	0.99	108	12	0.1	442	66	6.54
	31-May-17	770.28	0.80	66	5	0.1	252	33	5.93
	29-Aug-17	767.09	1.06	144	12	0.2	520	59	6.74
10-Oct-17	766.96	1.15	136	9	0.1	518	68	6.69	

Yellow background = Data to be compared against calculated Background values from the upgradient wells.

**Table 4**  
**New Castle Generating Station**  
**Ash Landfill--Groundwater Baseline Analytical Data**  
**CCR Appendix IV Constituents**

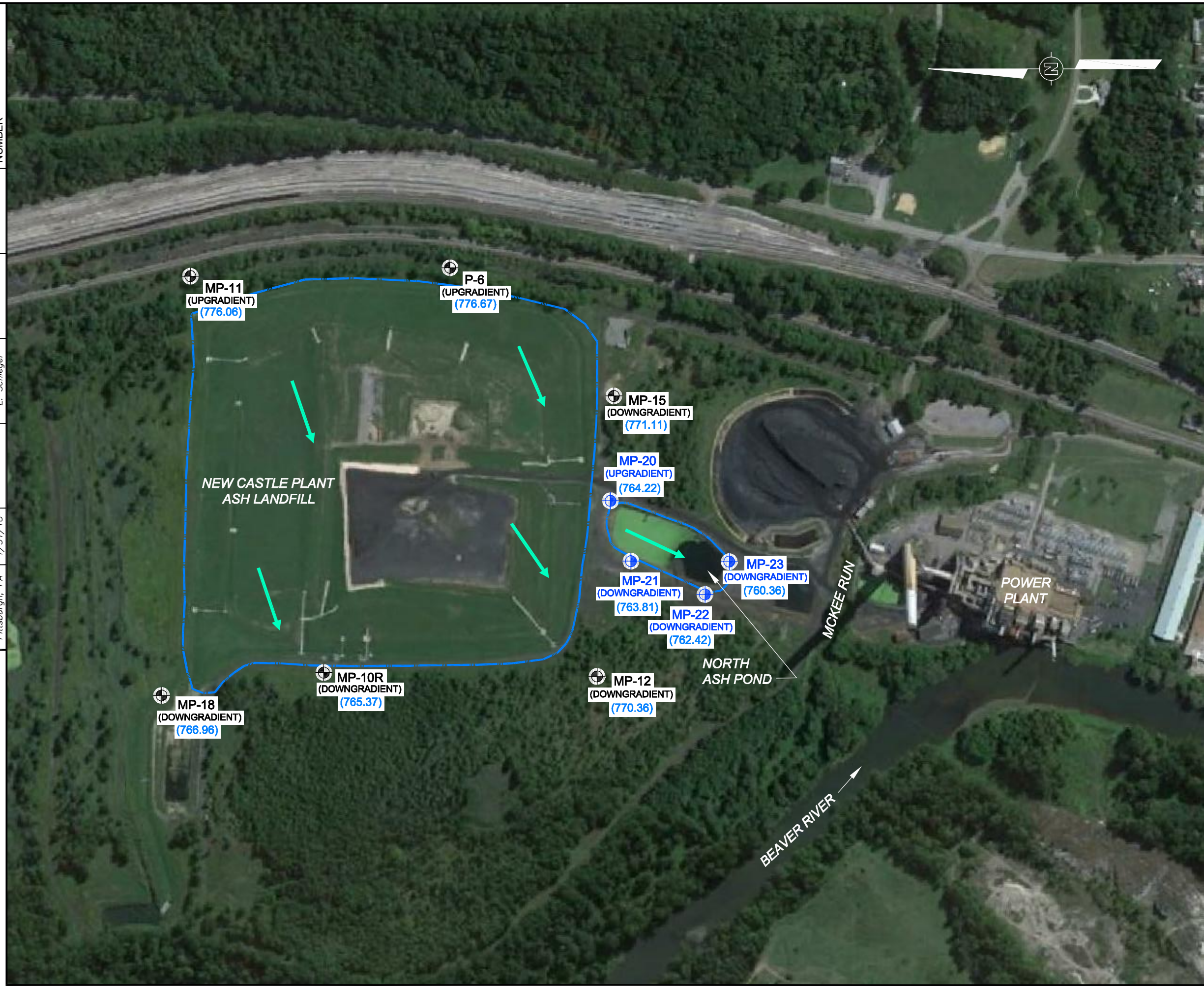
Monitoring Well	Date Sampled	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Cadmium (mg/L)	Total Chromium (mg/L)	Total Cobalt (mg/L)	Total Fluoride (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Selenium (mg/L)	Total Thallium (mg/L)	Total Radium-226 and 228 (pCi/L)
MP-11 (Upgradient)	30-Dec-15	< 0.001	0.001	0.04	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.002	< 0.0002	1.39
	1-Mar-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	0.002	< 0.0002	0.30
	1-Jun-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	0.002	< 0.0002	1.06
	7-Sep-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	0.88
	30-Nov-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	0.002	< 0.0002	-0.13
	1-Mar-17	< 0.001	0.001	0.04	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	0.04	0.002	< 0.0002	0.65
	31-May-17	< 0.001	0.003	0.04	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.001	< 0.0002	0.47
29-Aug-17	< 0.001	0.001	0.04	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	< 0.01	< 0.0002	< 0.02	0.002	< 0.0002	1.21	
P-6 (Upgradient)	30-Dec-15	< 0.001	0.004	0.17	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.76
	1-Mar-16	< 0.001	0.003	0.13	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.14
	1-Jun-16	< 0.001	0.002	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.75
	7-Sep-16	< 0.001	0.002	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.80
	30-Nov-16	< 0.001	0.002	0.11	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.89
	1-Mar-17	< 0.001	0.002	0.11	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.42
	31-May-17	< 0.001	0.007	0.14	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	0.002	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	1.11
29-Aug-17	< 0.001	0.003	0.10	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.1	< 0.001	< 0.01	< 0.0002	< 0.02	< 0.001	< 0.0002	0.54	
MP-10R (Downgradient)	30-Dec-15	< 0.001	0.002	0.04	< 0.001	< 0.002	< 0.01	0.034	< 0.1	< 0.001	0.56	< 0.0002	< 0.02	< 0.001	< 0.0002	1.70
	1-Mar-16	< 0.001	0.002	0.03	< 0.001	< 0.002	< 0.01	0.032	< 0.1	< 0.001	0.54	< 0.0002	< 0.02	< 0.001	< 0.0002	0.66
	1-Jun-16	< 0.001	0.002	0.03	< 0.001	< 0.002	< 0.01	0.024	< 0.1	< 0.001	0.40	< 0.0002	< 0.02	< 0.001	< 0.0002	1.16
	7-Sep-16	< 0.001	0.001	0.04	< 0.001	< 0.002	< 0.01	0.033	< 0.1	< 0.001	0.51	< 0.0002	< 0.02	< 0.001	< 0.0002	1.68
	30-Nov-16	< 0.001	0.002	0.03	< 0.001	< 0.002	< 0.01	0.030	< 0.1	< 0.001	0.55	< 0.0002	< 0.02	< 0.001	< 0.0002	0.37
	1-Mar-17	< 0.001	0.002	0.03	< 0.001	0.0005	< 0.01	0.028	< 0.1	< 0.001	0.40	< 0.0002	< 0.02	< 0.001	< 0.0002	1.22
	31-May-17	< 0.001	0.001	0.02	< 0.001	0.0006	< 0.01	0.016	< 0.1	< 0.001	0.17	< 0.0002	< 0.02	< 0.001	< 0.0002	1.13
29-Aug-17	< 0.001	0.002	0.03	< 0.001	0.0005	< 0.01	0.021	< 0.1	< 0.001	0.30	< 0.0002	< 0.02	< 0.001	< 0.0002	1.35	
MP-12 (Downgradient)	30-Dec-15	< 0.001	4.14	0.03	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.5	< 0.001	2.54	< 0.0002	0.03	< 0.001	0.0009	0.56
	1-Mar-16	< 0.001	3.60	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	< 1.0	< 0.001	2.24	< 0.0002	0.02	< 0.001	0.0007	0.34
	1-Jun-16	< 0.001	2.96	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	< 1.0	< 0.001	1.82	< 0.0002	< 0.02	< 0.001	0.0009	0.00
	7-Sep-16	< 0.001	4.91	0.02	< 0.001	< 0.0002	< 0.01	0.006	< 1.0	< 0.001	2.60	< 0.0002	0.03	< 0.001	0.0006	0.47
	30-Nov-16	< 0.001	4.59	0.02	< 0.001	< 0.0002	< 0.01	0.008	< 0.5	< 0.001	2.43	< 0.0002	0.03	< 0.001	0.0004	0.39
	1-Mar-17	< 0.001	3.98	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	0.2	< 0.001	1.95	< 0.0002	0.03	< 0.001	0.0003	-0.03
	31-May-17	< 0.001	1.54	0.03	< 0.001	0.0004	< 0.01	0.007	< 0.2	< 0.001	1.31	< 0.0002	< 0.02	< 0.005	0.0014	0.78
29-Aug-17	< 0.001	4.07	0.02	0.002	< 0.0002	< 0.01	0.007	< 0.5	< 0.001	2.25	< 0.0002	< 0.02	0.001	0.0006	1.00	
MP-15 (Downgradient)	30-Dec-15	< 0.001	0.069	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.06	< 0.0002	0.04	< 0.001	0.0019	0.52
	2-Mar-16	< 0.001	0.226	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.06	< 0.0002	< 0.02	< 0.001	0.0010	0.74
	2-Jun-16	< 0.001	0.208	0.02	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.06	< 0.0002	0.02	< 0.001	0.0012	1.35
	7-Sep-16	< 0.001	0.491	0.03	< 0.001	< 0.002	< 0.01	0.008	< 0.1	< 0.001	0.10	< 0.0002	0.12	< 0.001	0.0025	1.22
	30-Nov-16	< 0.001	0.372	0.03	< 0.001	< 0.002	< 0.01	< 0.005	< 0.1	< 0.001	0.08	< 0.0002	0.09	< 0.001	0.0036	0.46
	1-Mar-17	< 0.001	0.097	0.02	< 0.001	< 0.0002	< 0.01	0.005	< 0.1	< 0.001	0.06	< 0.0002	0.04	< 0.001	0.0017	0.53
	31-May-17	< 0.001	0.136	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.2	< 0.001	0.05	< 0.0002	0.02	< 0.001	0.0013	0.56
29-Aug-17	< 0.001	0.307	0.02	< 0.001	< 0.0002	< 0.01	< 0.005	< 0.2	< 0.001	0.07	< 0.0002	0.05	< 0.001	0.0019	0.71	
MP-18 (Downgradient)	30-Dec-15	< 0.001	0.020	0.08	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	0.05	< 0.0002	< 0.02	0.025	0.0017	0.98
	1-Mar-16	0.001	0.025	0.11	< 0.001	< 0.002	< 0.01	< 0.005	0.1	< 0.001	0.13	< 0.0002	0.04	0.079	0.0041	0.36
	1-Jun-16	< 0.001	0.018	0.05	< 0.001	< 0.002	< 0.01	< 0.005	< 0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.002	0.0003	1.33
	7-Sep-16	< 0.001	0.017	0.05	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.001	0.0002	1.39
	30-Nov-16	< 0.001	0.017	0.08	< 0.001	< 0.002	< 0.01	< 0.005	0.2	< 0.001	0.05	< 0.0002	< 0.02	0.009	0.0008	0.61
	1-Mar-17	< 0.001	0.009	0.08	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	0.06	< 0.0002	0.02	0.057	0.0017	1.19
	31-May-17	0.004	0.003	0.11	< 0.001	< 0.0002	< 0.01	< 0.005	0.1	< 0.001	0.10	< 0.0002	0.05	0.037	0.0051	0.72
29-Aug-17	< 0.001	0.008	0.07	< 0.001	< 0.0002	< 0.01	< 0.005	0.2	< 0.001	< 0.01	< 0.0002	< 0.02	0.001	0.0007	1.33	

*Figures*

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OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	1/31/18	--	E. Schlegel	--	--	1009194003-B5

File: O:\PROJECT\1009194003-New Castle\1009194003-B5.dwg  
 Plot Date/Time: Jan 31, 2018 - 9:15am  
 Xref:  
 Image  
 Plotted By: Evan.Schlegel



- LEGEND:**
- MP-11**  
(776.06) CCR GROUNDWATER MONITORING WELL FOR NEW CASTLE PLANT ASH LANDFILL WITH GROUNDWATER ELEVATIONS MEASURED ON OCTOBER 10, 2017.
  - MP-23**  
(760.36) CCR GROUNDWATER MONITORING WELL FOR NORTH ASH POND WITH GROUNDWATER ELEVATIONS MEASURED ON OCTOBER 9, 2017.
  - GROUNDWATER FLOW DIRECTION



- REFERENCES:**
- GOOGLE AERIAL PHOTOGRAPH, DATED 9/11/2012.

	500 Penn Center Boulevard, Suite 1000 Pittsburgh, Pennsylvania 15235
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**FIGURE 1**  
**CCR COMPLIANCE GROUNDWATER MONITORING WELL LOCATION MAP**  
 PLANT ASH LANDFILL AND NORTH ASH POND  
 NEW CASTLE GENERATING STATION  
 NEW CASTLE, PENNSYLVANIA