Annual Groundwater Monitoring Report

Southwestern Electric Power Company

Welsh Power Plant

Bottom Ash Storage Pond

CN 602843245; RN100213370

Registration No: CCR 110

1187 Country Road 4865

Titus County

Pittsburg, Texas

January 2023

Prepared by:
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1 Riverside Plaza
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SOUTHWESTERN ELECTRIC POWER COMPANY℠

An AEP Company

BOUNDLESS ENERGY℠

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Abbreviations:
ASD - Alternate Source Demonstration
BASP – Bottom Ash Storage Pond
CCR – Coal Combustion Residual
GWPS - Groundwater protection standards
SSI - Statistically Significant Increase
SSL - Statistically Significant Level
TCEQ – Texas Commission on Environmental Quality

I. Overview

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year for an existing Coal Combustion Residual (CCR) unit at Southwestern Electric Power Company's (SWEPCO's), a wholly owned subsidiary of American Electric Power Company (AEP), Welsh Power Plant (CCR No.: 110). The Texas Commission on Environmental Quality's (TCEQ's) CCR rule requires that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31, 2023.

In general, the following activities were completed:

- At the start of the current annual reporting period, the BASP was operating under the Detection Monitoring program;
- At the end of the current annual reporting period, the BASP was operating under the Detection Monitoring program;
- Groundwater samples and elevations were collected for AD-1, AD-5, AD-17, AD-3, AD-4C, and AD-16R and analyzed for Appendix III constituents, as specified in 30 TAC §352.941 and AEP's *Groundwater Sampling and Analysis Plan (2021)*.
- The background data was re-established on December 8, 2021.
- The 1st semi-annual groundwater sampling event was conducted in June 2022 with confirmation sampling conducted in August 2022:
    - Potential Statistically Significant increases (SSIs) were identified for:
        - Sulfate in AD-4C
- Statistical evaluation of the 2nd semi-annual sampling event, held in November 2022, is underway:
- ASD for the 1st semi-annual 2022 potential Sulfate SSI is underway.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

- A map, aerial photograph or a drawing showing the BASP CCR management unit(s), all groundwater monitoring wells and monitoring well identification numbers (Attached as **Appendix 1**, where applicable);
- Statistical comparison of monitoring data to determine if there have been SSI(s) or SSL(s) (Attached as **Appendix 2**, where applicable);
- A discussion of whether any alternate source demonstrations (ASDs) were performed, and the conclusions (Attached as **Appendix 3**, where applicable);
- A summary of any transition between monitoring programs, or an alternate monitoring frequency, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring, in addition to identifying the constituents detected at a SSI over background concentrations (Notices Attached as **Appendix 4**, where applicable);
- Identification of any monitoring wells that were installed, or decommissioned during the preceding year, along with a statement as to why that happened (Attached as **Appendix 5**, where applicable); and
- Other information required to be included in the annual report, field sheets, analytical reports, etc. (Attached as **Appendix 6**)

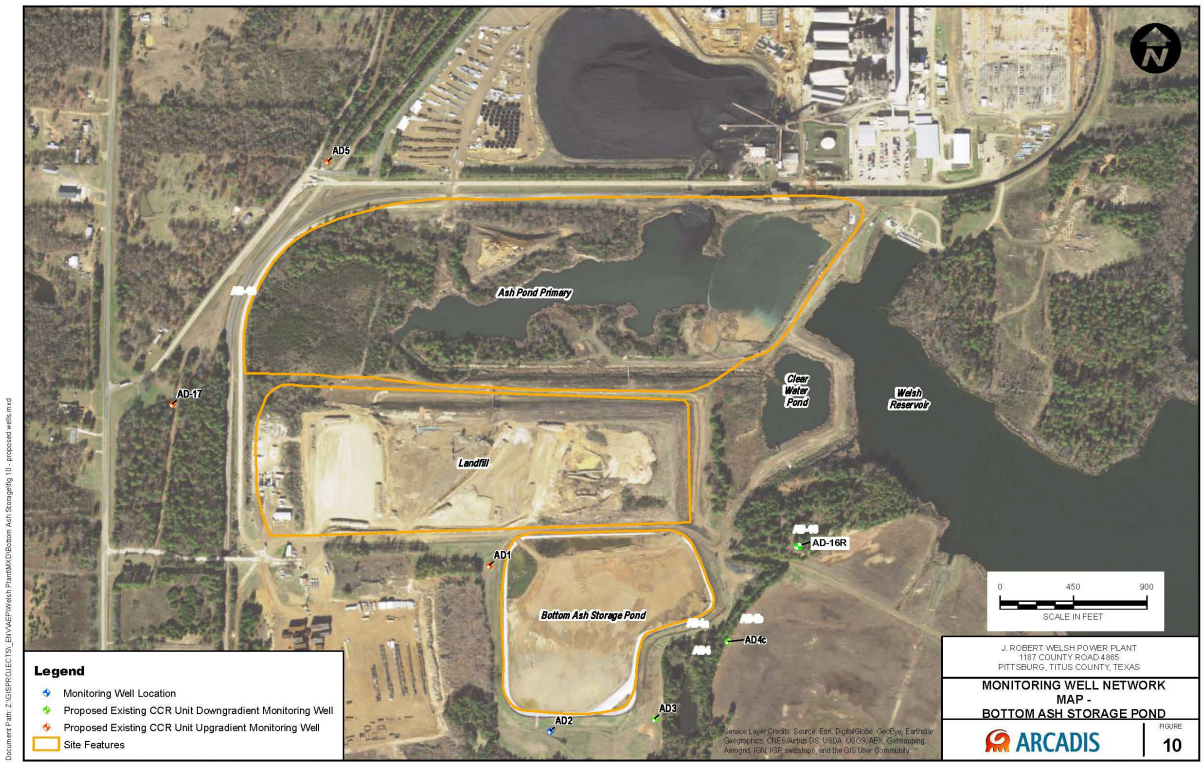
In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

The figure that follows depicts the PE-certified groundwater monitoring network for the Bottom Ash Storage Pond (BASP), the monitoring well locations, and their corresponding identification numbers is provided below.

BASP Monitoring Wells	
Background	Down Gradient
AD-1	AD-3
AD-5	AD-4C
AD-17	AD-16R

Note: AD-2 is used for gauging purposes



III. Monitoring Wells Installed or Decommissioned

There were no groundwater monitoring wells installed or decommissioned during this reporting period.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion

Groundwater samples and elevations were collected for AD-1, AD-5, AD-17, AD-3, AD-4C, and AD-16R and analyzed for Appendix III constituents, as specified in 30 TAC §352.941 and AEP's *Groundwater Sampling and Analysis Plan (2021)*.

Appendix 1 contains potentiometric maps with the static water elevation, groundwater flow direction for each monitoring event, tables showing groundwater velocity, and the groundwater quality data collected under 30 TAC 352.941.

The groundwater flow rate and direction for the confirmatory sampling events reflect that seen during the semi-annual sampling events.

V. Groundwater Quality Data Statistical Analysis

Appendix 2 contains the statistical analysis reports available for this reporting period.

- Data and statistical analysis completed for the 1st semi-annual groundwater sampling event, held June 26, 2022 with confirmatory sampling August 26, 2022, was certified November 7, 2022 and indicated:

  A potential SSI was identified for:
  - Sulfate in AD-4C

- Data and statistical analysis for the 2nd semi-annual groundwater sampling event held in November 2022 is underway.

VI. Alternate Source Demonstrations Completed

An alternate source demonstration (ASD) is being conducted for:

- 1st semi-annual 2022 groundwater sampling event (June/August 2022):
  - Sulfate in AD-4C

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

Since an ASD is being completed for the potential SSI(s), no transition was made during the reporting period and the CCR Unit remained in detection monitoring.

VIII. Other Information Require

Field sheets and laboratory reports for this reporting period are in Appendix 6.

IX. Description of Any Problems Encountered and Actions Taken

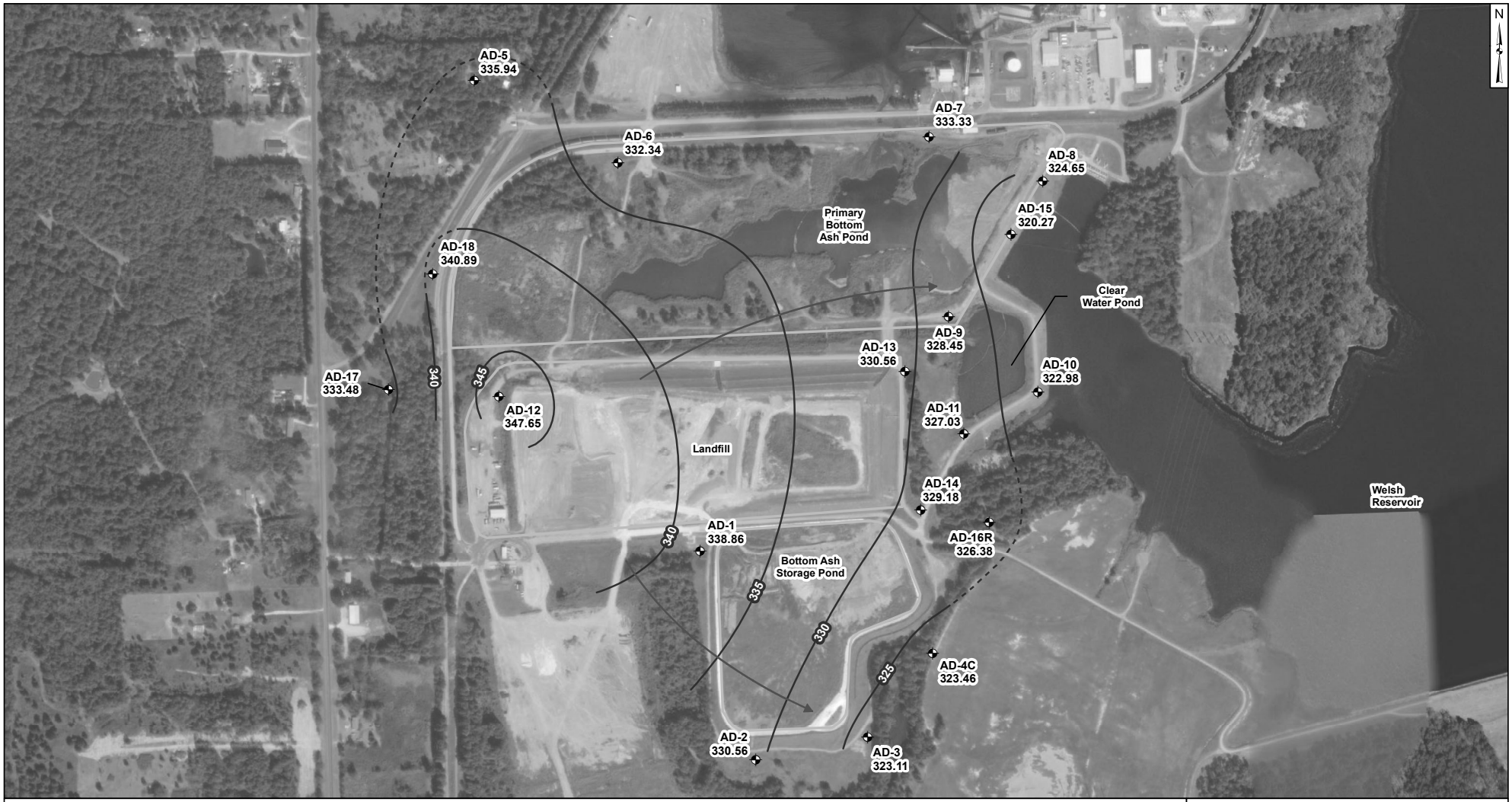
No significant problems were encountered.

X. A Projection of Key Activities for the Upcoming Year

- Detection monitoring on a semi-annual schedule for 30 TAC 352 Appendix III constituents;
- Evaluation of the detection monitoring results from a statistical analysis viewpoint, looking for SSIs;
- Conduct ASDs, if needed;
- Responding to any new data received in light of TCEQ's CCR rule requirements;
- Preparation of the next annual groundwater report;

APPENDIX 1

Potentiometric maps and Tables that follow show the groundwater monitoring data collected, the rate and direction of groundwater flow, and a summary showing the number of samples collected per monitoring well. The dates that the samples were collected also is shown.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction
- CCR Units

Notes

- Monitoring well coordinates and water level data (collected on June 27 and 28, 2022) provided by AEP.
- Site features based on information available in CCR Groundwater Monitoring Well Network Evaluation (Arcadis, 2018).
- Groundwater elevation units are feet above mean sea level.

500 250 0 500 Feet

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Beth Ann Gross
Dec 7, 2022

Geosyntec Consultants, Inc.
Texas Firm Registration No. 1182

Groundwater Potentiometric Map
June 2022

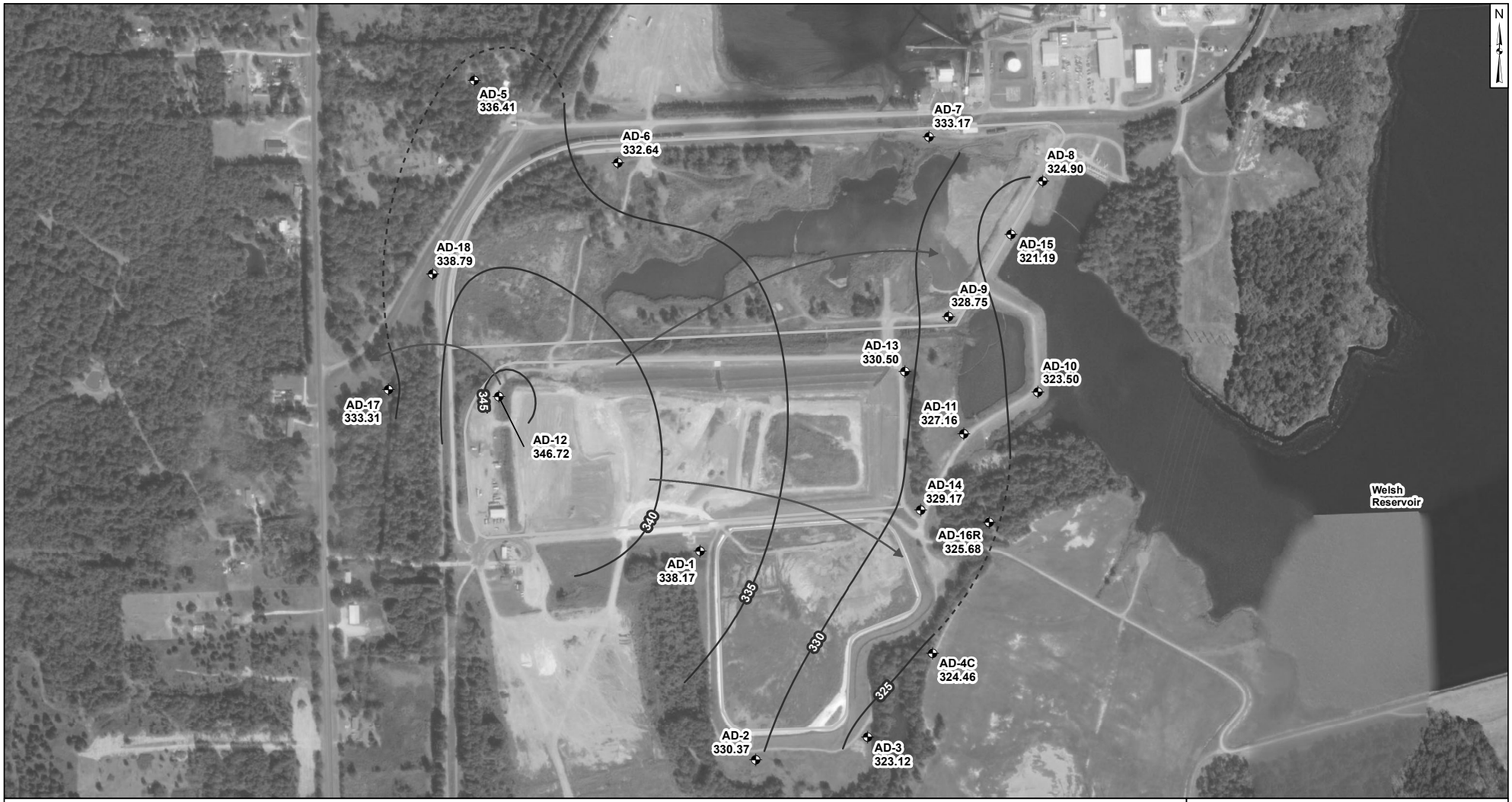
AEP Welsh Power Plant
Cason, Texas

Geosyntec consultants

Columbus, Ohio | 2022/10/31

Figure 1

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Welsh\2022\AEP-Welsh_GW_2022-06June.mxd. ASoltero. 10/31/2022. CHA8423/14/08.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction
- CCR Units

Notes

- Monitoring well coordinates and water level data (collected on November 1, 2022) provided by AEP.
- Site features based on information available in CCR Groundwater Monitoring Well Network Evaluation (Arcadis, 2018).
- Groundwater elevation units are feet above mean sea level.
- Satellite imagery provided by ESRI.

500 250 0 500 Feet

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January 5, 2023

Geosyntec Consultants, Inc.
Texas Firm Registration No. 1182

Groundwater Potentiometric Map
November 2022

AEP Welsh Power Plant
Cason, Texas

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Figure 2

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Welsh\2022\AEP-Welsh_GW_2022-11Nov.mxd. ASoltero. 11/16/2022. CHA8423/14/08.

Table 1: Residence Time Calculation Summary
Welsh Bottom Ash Storage Pond

Geosyntec Consultants, Inc.

			2022-06		2022-08[3]		2022-11	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Bottom Ash Storage Pond	AD-1 [1]	2.0	3.2	19.1	NC	NC	2.9	20.9
	AD-3 [2]	2.0	5.6	10.9	NC	NC	5.9	10.4
	AD-4C [2]	2.0	3.2	19.0	3.0	20.4	2.9	20.9
	AD-5 [1]	2.0	1.5	39.8	NC	NC	1.7	36.7
	AD-16R [2]	2.0	2.2	27.8	NC	NC	2.6	23.4
	AD-17 [1]	2.0	10.0	6.1	NC	NC	7.1	8.6

Notes:
[1] - Upgradient Well
[2] - Downgradient Well
[3] - Two-of-two verification sampling
NC - Not Calculated

Table 1 - Groundwater Data Summary: AD-1
Welsh - BASP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/26/2016	Background	0.346	36.5	5	< 0.083 U1	5.9	42	252
7/27/2016	Background	0.35	39.6	4	< 0.083 U1	5.3	36	239
9/30/2016	Background	0.332	15	5	< 0.083 U1	5.4	35	173
10/19/2016	Background	0.398	19.1	4	< 0.083 U1	5.2	42	192
12/12/2016	Background	0.394	8.74	4	< 0.083 U1	5.2	40	200
1/17/2017	Background	0.656	129	4	< 0.083 U1	7.1	68	538
2/23/2017	Background	0.7	147	9	< 0.083 U1	6.9	68	612
6/7/2017	Background	0.449	15.1	4	< 0.083 U1	5.1	42	176
10/6/2017	Detection	0.453	14.3	4	< 0.083 U1	5.3	40	160
5/24/2018	Detection	0.345	10.2	4	< 0.083 U1	5.2	43	150
8/14/2018	Detection	0.443	5.95	5	< 0.083 U1	5.2	44	160
2/20/2019	Detection	0.504	142	2.82	0.24	7.3	49.2	522
5/30/2019	*	0.689	138	1.59	0.29	6.7	43.3	588
7/24/2019	Detection	0.644	62.7	2	0.106 J1	6.0	58	180
2/17/2020	*	0.626	115	3.41	0.31	5.8	56.3	488
5/20/2020	Detection	0.801	126	1.83	0.20	7.2	51.4	508
10/14/2020	Detection	0.670	3.88	2.16	0.25	4.5	66.9	183
2/23/2021	*	0.617	113	--	0.31	6.6	--	--
6/2/2021	Detection	0.786	97.1	2.26	0.30	6.2	61.4	400
10/20/2021	Detection	0.732	4.8	2.21	0.22	4.4	72.4	190
6/28/2022	Detection	0.768	6.76	2.32	0.22	4.9	74.7	180
11/1/2022	Detection	0.586	7.87	2.70	0.14	4.8	61.3	170

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
* Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-1
Welsh - BASP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/26/2016	Background	< 0.93 U1	1.39361 J1	191	0.271453 J1	0.213294 J1	0.240267 J1	1.15339 J1	1.184	< 0.083 U1	< 0.68 U1	0.01	0.033	0.53149 J1	1.74922 J1	0.959865 J1
7/27/2016	Background	< 0.93 U1	< 1.05 U1	191	0.315631 J1	0.0940357 J1	< 0.23 U1	0.615933 J1	0.9952	< 0.083 U1	< 0.68 U1	0.019	0.00793 J1	< 0.29 U1	1.81763 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	2.96797 J1	141	0.382874 J1	< 0.07 U1	5	0.850408 J1	1.38	< 0.083 U1	3.38434 J1	0.014	0.01773 J1	< 0.29 U1	1.02629 J1	< 0.86 U1
10/19/2016	Background	< 0.93 U1	< 1.05 U1	114	0.311247 J1	< 0.07 U1	0.412131 J1	0.649606 J1	1.141	< 0.083 U1	< 0.68 U1	0.008	0.00534 J1	1.39872 J1	2.03168 J1	1.25062 J1
12/12/2016	Background	< 0.93 U1	< 1.05 U1	72	0.34133 J1	< 0.07 U1	< 0.23 U1	0.424105 J1	0.719	< 0.083 U1	< 0.68 U1	0.008	0.01521 J1	< 0.29 U1	1.85825 J1	< 0.86 U1
1/17/2017	Background	< 0.93 U1	< 1.05 U1	410	0.0366913 J1	< 0.07 U1	< 0.23 U1	0.480125 J1	3.009	< 0.083 U1	< 0.68 U1	0.000275956 J1	< 0.005 U1	< 0.29 U1	4.04737 J1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	488	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.765099 J1	4.309	< 0.083 U1	< 0.68 U1	0.001	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	1.14 J1	93.46	0.37 J1	< 0.07 U1	0.66 J1	0.77 J1	0.676	< 0.083 U1	< 0.68 U1	0.00902	0.007 J1	< 0.29 U1	2.1 J1	< 0.86 U1

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: AD-3
Welsh - BASP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/31/2016	Background	0.02	1.41	9	< 0.083 U1	6.6	4	106
7/27/2016	Background	0.02	0.706	8	< 0.083 U1	6.7	5	118
9/30/2016	Background	0.02	0.5	9	< 0.083 U1	4.8	6	127
10/19/2016	Background	0.06	0.794	8	< 0.083 U1	3.7	9	112
12/12/2016	Background	0.02	1.05	8	< 0.083 U1	4.7	11	138
1/19/2017	Background	0.02	0.746	9	< 0.083 U1	4.6	4	76
2/23/2017	Background	0.02	0.573	9	< 0.083 U1	4.7	5	104
6/7/2017	Background	0.03326	0.543	9	0.2625 J1	4.5	5	104
10/6/2017	Detection	0.02055	0.908	9	< 0.083 U1	5.2	7	114
5/24/2018	Detection	0.0069 J1	0.545	8	< 0.083 U1	4.4	3	98
11/13/2018	Detection	0.009 J1	0.684	8	< 0.083 U1	5.2	4.05	114
2/20/2019	Detection	0.01 J1	0.817	9.4	0.13	4.8	1.9	110
4/30/2019	Detection	0.007	--	9.34	--	4.1	--	--
5/30/2019	*	< 0.02 U1	3.02	9.03	0.18	4.3	2.3	110
7/24/2019	Detection	< 0.02 U1	1.35	7	0.09 J1	4.6	6	116
11/25/2019	Detection	--	0.734	--	--	--	--	--
5/20/2020	Detection	< 0.02 U1	0.724	7.99	0.11	4.6	2.7	236
7/22/2020	Detection	--	--	--	--	4.7	--	114
10/14/2020	Detection	< 0.02 U1	0.705	7.31	0.16	4.6	3.5	116
6/2/2021	Detection	0.036 J1	0.7	7.98	0.18	4.4	3.38	110
10/20/2021	Detection	< 0.009 U1	0.9	7.16	0.15	4.2	6.02	130
6/28/2022	Detection	0.016 J1	0.68	8.01	0.14	3.9	2.55	120
11/1/2022	Detection	< 0.009 U1	1.57	8.04	0.14	4.4	13.0	110

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
* Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-3
Welsh - BASP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/31/2016	Background	< 0.93 U1	1.56793 J1	53	0.286352 J1	< 0.07 U1	0.464721 J1	1.49214 J1	1.018	< 0.083 U1	< 0.68 U1	0.01	0.85	< 0.29 U1	0.995807 J1	1.31537 J1
7/27/2016	Background	3.21106 J1	< 1.05 U1	36	0.349485 J1	< 0.07 U1	0.515023 J1	1.19046 J1	0.183	< 0.083 U1	< 0.68 U1	0.024	0.589	1.43134 J1	2.40188 J1	< 0.86 U1
9/30/2016	Background	2.70729 J1	2.61987 J1	43	0.188596 J1	0.0802799 J1	0.659763 J1	1.44845 J1	0.552	< 0.083 U1	< 0.68 U1	0.019	0.39	< 0.29 U1	1.79734 J1	< 0.86 U1
10/19/2016	Background	2.47184 J1	1.97572 J1	41	0.451723 J1	0.277085 J1	0.818782 J1	1.53187 J1	1.589	< 0.083 U1	< 0.68 U1	0.018	0.351	6	< 0.99 U1	< 0.86 U1
12/12/2016	Background	< 0.93 U1	< 1.05 U1	45	0.262387 J1	< 0.07 U1	0.627352 J1	1.34901 J1	0.546	< 0.083 U1	< 0.68 U1	0.017	0.321	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/19/2017	Background	< 0.93 U1	2.13113 J1	41	0.235263 J1	< 0.07 U1	0.647294 J1	1.6345 J1	0.35	< 0.083 U1	< 0.68 U1	0.014	0.504	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	37	0.209151 J1	< 0.07 U1	< 0.23 U1	1.1537 J1	0.4592	< 0.083 U1	< 0.68 U1	0.014	0.501	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	1.91 J1	38	0.24 J1	0.08 J1	0.75 J1	1.28 J1	0.459	0.2625 J1	< 0.68 U1	0.01503	0.365	< 0.29 U1	< 0.99 U1	< 0.86 U1

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: AD-4C
Welsh - BASP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/31/2016	Background	0.05	0.798	10	< 0.083 U1	5.4	32	204
7/27/2016	Background	0.03	0.666	12	< 0.083 U1	5.5	35	208
9/30/2016	Background	0.02	0.5	11	< 0.083 U1	5.0	45	212
10/19/2016	Background	0.04	0.578	10	< 0.083 U1	4.3	35	212
12/12/2016	Background	0.02	0.341	11	< 0.083 U1	4.6	36	252
1/19/2017	Background	0.02	0.761	10	< 0.083 U1	4.7	43	184
2/23/2017	Background	0.02	0.467	9	< 0.083 U1	5.1	40	196
6/7/2017	Background	0.03331	0.573	10	< 0.083 U1	4.9	39	228
10/6/2017	Detection	0.02565	0.654	11	< 0.083 U1	5.4	44	226
5/24/2018	Detection	0.02505	0.434	14	< 0.083 U1	5.2	42	224
8/14/2018	Detection	--	--	15	--	5.0	--	--
11/13/2018	Detection	0.01 J1	0.609	7.5	< 0.083 U1	5.8	56	220
12/18/2018	Detection	--	--	--	--	4.9	58	--
2/20/2019	Detection	0.01 J1	0.931	9.18	0.1 J1	5.2	60.1	242
4/30/2019	Detection	0.014	--	--	--	4.8	56.2	--
5/30/2019	*	< 0.02 U1	0.564	14.8	0.16	4.6	52.8	208
7/24/2019	Detection	< 0.02 U1	0.586	13	< 0.083 U1	3.9	52	284
12/19/2019	Detection	--	--	--	--	--	--	226
5/20/2020	Detection	< 0.02 U1	0.679	15.1	0.11	5.1	69.0	268
7/22/2020	Detection	--	--	--	--	4.7	71.8	280
10/13/2020	Detection	< 0.02 U1	0.613	13.1	0.18	4.9	76.1	278
12/10/2020	Detection	--	--	--	--	4.9	78.2	288
6/2/2021	Detection	0.038 J1	1.1	13.3	0.16	4.6	82.4	280
7/26/2021	Detection	--	1.4	--	--	4.6	71.9	280
10/20/2021	Detection	0.021 J1	0.8	14.3	0.15	4.3	76.8	280
6/28/2022	Detection	0.043 J1	1.08	14.1	0.12	4.8	83.6	280
8/26/2022	Detection	--	--	--	--	3.6	160	--
11/1/2022	Detection	0.068	1.42	19.1	0.1	4.9	142	370

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
* Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-4C
Welsh - BASP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/31/2016	Background	< 0.93 U1	< 1.05 U1	88	0.407928 J1	< 0.07 U1	9	1.19093 J1	1.289	< 0.083 U1	< 0.68 U1	0.004	0.191	< 0.29 U1	1.12526 J1	< 0.86 U1
7/27/2016	Background	< 0.93 U1	< 1.05 U1	59	0.335947 J1	< 0.07 U1	4	0.852951 J1	0.571	< 0.083 U1	< 0.68 U1	0.015	0.185	1.09296 J1	2.52271 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	1.51249 J1	74	0.274296 J1	< 0.07 U1	8	0.986752 J1	2.572	< 0.083 U1	< 0.68 U1	0.006	0.16	< 0.29 U1	1.95938 J1	< 0.86 U1
10/19/2016	Background	< 0.93 U1	1.74748 J1	69	0.347477 J1	0.0809157 J1	9	1.08565 J1	1.657	< 0.083 U1	< 0.68 U1	0.006	0.141	3.20217 J1	1.18291 J1	< 0.86 U1
12/12/2016	Background	< 0.93 U1	2.24683 J1	21	0.133622 J1	< 0.07 U1	0.944028 J1	0.305391 J1	0.685	< 0.083 U1	< 0.68 U1	0.004	0.143	< 0.29 U1	1.27423 J1	< 0.86 U1
1/19/2017	Background	< 0.93 U1	1.85604 J1	75	0.221609 J1	< 0.07 U1	4	1.02773 J1	2.045	< 0.083 U1	< 0.68 U1	0.005	0.125	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	30	0.102645 J1	< 0.07 U1	0.421354 J1	0.364739 J1	0.517	< 0.083 U1	< 0.68 U1	0.004	0.098	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	1.19 J1	51.42	0.19 J1	0.08 J1	4.03	0.75 J1	0.953	< 0.083 U1	< 0.68 U1	0.00482	0.147	< 0.29 U1	< 0.99 U1	< 0.86 U1

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: AD-5
Welsh - BASP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/31/2016	Background	0.03	36.9	15	0.3469 J1	6.4	123	337
7/28/2016	Background	0.04	44.7	16	< 0.083 U1	5.4	163	360
9/30/2016	Background	0.04	46.3	15	0.2436 J1	5.3	190	416
10/20/2016	Background	0.05	50.7	14	< 0.083 U1	5.9	267	448
12/13/2016	Background	0.05	49.6	13	< 0.083 U1	6.2	233	484
1/17/2017	Background	0.04	49.8	14	< 0.083 U1	6.3	234	438
2/23/2017	Background	0.04	33	15	< 0.083 U1	5.5	127	286
6/7/2017	Background	0.05281	49.7	14	< 0.083 U1	6.0	82	300
10/6/2017	Detection	0.04322	33.1	16	< 0.083 U1	5.6	82	258
5/24/2018	Detection	0.05007	28.1	22	< 0.083 U1	6.2	60	242
8/15/2018	Detection	0.050	40.5	19	< 0.083 U1	6.2	240	428
2/21/2019	Detection	0.033	33.9	24.7	0.21	5.4	46.5	220
5/30/2019	*	0.03 J1	30.0	22.3	0.29	6.3	51.3	238
7/24/2019	Detection	0.04 J1	41.1	18	0.112 J1	6.3	90	354
2/17/2020	*	0.03 J1	39.8	19.8	0.22	5.5	43.7	248
5/20/2020	Detection	0.03 J1	40.2	22.3	0.18	6.8	55.5	264
10/14/2020	Detection	0.04 J1	36.6	18.8	0.18	6.5	148	338
2/23/2021	*	0.03 J1	30.9	--	0.23	6.0	--	--
6/2/2021	Detection	0.027 J1	24.4	19.6	0.21	5.8	53.8	220
10/20/2021	Detection	0.038 J1	38.4	17.4	0.17	5.6	155	370
6/28/2022	Detection	0.048 J1	32.9	15.3	0.15	5.9	146	310
11/1/2022	Detection	0.041 J1	38.6	16.9	0.16	5.9	185	380

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
* Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-5
Welsh - BASP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/31/2016	Background	< 0.93 U1	< 1.05 U1	57	0.149801 J1	0.0765156 J1	0.555038 J1	14	1.634	0.3469 J1	< 0.68 U1	0.135	0.01135 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/28/2016	Background	2.05116 J1	2.90819 J1	93	0.518653 J1	0.502155 J1	0.411466 J1	15	4.75	< 0.083 U1	< 0.68 U1	0.191	0.01516 J1	< 0.29 U1	1.08901 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	4.7609 J1	87	0.251584 J1	< 0.07 U1	0.90676 J1	14	3.33	0.2436 J1	< 0.68 U1	0.186	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/20/2016	Background	< 0.93 U1	< 1.05 U1	70	0.08781 J1	0.107488 J1	0.248085 J1	9	2.319	< 0.083 U1	< 0.68 U1	0.225	< 0.005 U1	1.36984 J1	< 0.99 U1	< 0.86 U1
12/13/2016	Background	< 0.93 U1	1.15381 J1	53	0.164529 J1	0.203546 J1	0.747921 J1	13	2.182	< 0.083 U1	< 0.68 U1	0.199	0.00802 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/17/2017	Background	< 0.93 U1	< 1.05 U1	47	0.0574718 J1	0.180502 J1	< 0.23 U1	12	1.023	< 0.083 U1	< 0.68 U1	0.239	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	42	0.0306858 J1	< 0.07 U1	< 0.23 U1	13	1.788	< 0.083 U1	< 0.68 U1	0.166	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	3.85 J1	87.7	0.08 J1	0.39 J1	0.28 J1	11.93	2.32	< 0.083 U1	< 0.68 U1	0.124	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: AD-16R
Welsh - BASP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/6/2017	Background	0.04198	2.75	7	0.3438 J1	3.7	54	204
6/28/2017	Background	0.06398	1.24	6	0.2512 J1	3.9	55	200
7/7/2017	Background	0.02699	2.07	36	< 0.083 U1	3.4	52	184
7/14/2017	Background	0.04415	2.39	6	0.2516 J1	3.5	44	160
7/21/2017	Background	0.03237	2.5	7	0.2615 J1	3.5	54	180
7/28/2017	Background	0.02841	1.92	7	< 0.083 U1	2.8	48	162
8/2/2017	Background	0.03177	1.86	7	< 0.083 U1	3.0	49	174
8/11/2017	Background	0.06192	1.83	8	< 0.083 U1	4.1	44	164
8/18/2017	Background	0.0304	1.44	7	< 0.083 U1	3.4	46	160
8/31/2017	Background	0.02841	1.33	7	< 0.083 U1	3.9	63	152
10/6/2017	Detection	0.04672	0.896	7	< 0.083 U1	3.3	82	152
1/18/2018	Detection	--	--	--	--	4.0	58.6	--
5/23/2018	Detection	0.03202	2.53	6	< 0.083 U1	3.8	67	204
8/14/2018	Detection	--	--	--	--	3.9	44	--
11/13/2018	Detection	0.02 J1	0.467	6.5	< 0.083 U1	5.6	54	186
2/20/2019	Detection	0.03 J1	2	6.78	0.2	4.7	52.8	200
4/30/2019	Detection	0.015	--	--	--	3.9	--	--
5/29/2019	*	< 0.02 U1	1.36	5.43	0.19	3.9	41.6	80
7/24/2019	Detection	0.03 J1	1.50	7	0.13 J1	3.6	70	250
12/19/2019	Detection	--	--	--	--	--	--	134
5/20/2020	Detection	0.02 J1	1.54	7.09	0.16	3.4	71.4	242
7/22/2020	Detection	--	--	--	--	3.2	--	224
10/14/2020	Detection	0.02 J1	0.550	6.50	0.14	3.3	53.1	183
6/2/2021	Detection	0.028 J1	1.0	7.02	0.28	3.7	65.4	190
10/20/2021	Detection	0.019 J1	0.4	7.12	0.11	3.6	39.0	170
6/27/2022	Detection	0.026 J1	0.34	7.21	0.10	3.2	46.5	170
11/1/2022	Detection	0.019 J1	0.32	7.96	0.10	3.4	48.1	150

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
* Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-16R
Welsh - BASP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/6/2017	Background	< 0.93 U1	7.07	46.4	2.21	1.03	1.76	41.74	6.66	0.3438 J1	< 0.68 U1	0.0293	< 0.005 U1	< 0.29 U1	1.98 J1	< 0.86 U1
6/28/2017	Background	< 0.93 U1	5.28	41.43	2.16	0.92 J1	0.95 J1	40.87	12.11	0.2512 J1	< 0.68 U1	0.02932	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/7/2017	Background	< 0.93 U1	4.13 J1	44.56	2.08	0.97 J1	1.44	41.75	25.16	< 0.083 U1	< 0.68 U1	0.02846	< 0.005 U1	< 0.29 U1	2.09 J1	1.2 J1
7/14/2017	Background	< 0.93 U1	6.31	54.35	2.01	1.09	0.84 J1	37.88	9.12	0.2516 J1	< 0.68 U1	0.02391	0.009 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/21/2017	Background	< 0.93 U1	3.88 J1	51.06	2.09	1.02	1.43	40.86	9.81	0.2615 J1	< 0.68 U1	0.02653	< 0.005 U1	< 0.29 U1	1 J1	< 0.86 U1
7/28/2017	Background	< 0.93 U1	3.7	48.51	2.17	1.28	1.07	45.33	8.52	< 0.083 U1	< 0.68 U1	0.02617	0.006 J1	< 0.29 U1	1.27 J1	1.43 J1
8/2/2017	Background	< 0.93 U1	4.46 J1	49.61	2.06	1.22	0.95 J1	43.11	5.45	< 0.083 U1	< 0.68 U1	0.02498	< 0.005 U1	< 0.29 U1	1.74	2.02
8/11/2017	Background	< 0.93 U1	4.93 J1	47.52	1.89	1.13	0.96 J1	40.37	--	< 0.083 U1	< 0.68 U1	0.02347	0.008 J1	< 0.29 U1	1.36 J1	< 0.86 U1
8/18/2017	Background	< 0.93 U1	2.35 J1	43.85	1.91	1.08	0.8 J1	40.05	5.56	< 0.083 U1	< 0.68 U1	0.02466	0.009 J1	< 0.29 U1	< 0.99 U1	0.92 J1
8/31/2017	Background	< 0.93 U1	2.12 J1	44.14	1.75	1.04	1.18	37.56	6.68	< 0.083 U1	< 0.68 U1	0.02429	0.006 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: AD-17
Welsh - BASP
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/26/2016	Background	0.121	200	43	0.4023 J1	7.2	1,166	1,810
7/27/2016	Background	0.119	195	32	0.4135 J1	5.7	1,005	1,576
9/30/2016	Background	0.111	191	36	0.3055 J1	6.2	1,055	1,663
10/20/2016	Background	0.124	194	32	0.583 J1	6.1	1,163	1,612
12/13/2016	Background	0.135	196	31	0.5399 J1	6.0	1,096	1,560
1/17/2017	Background	0.101	196	33	< 0.083 U1	5.9	1,445	1,686
2/22/2017	Background	0.135	189	30	< 0.083 U1	5.7	1,055	1,628
6/6/2017	Background	0.121	188	30	< 0.083 U1	5.8	1,105	1,578
10/5/2017	Detection	0.183	183	31	< 0.083 U1	5.9	1,090	1,548
5/24/2018	Detection	0.239	193	39	< 0.083 U1	6.3	1,067	1,836
8/15/2018	Detection	0.118	187	--	--	5.6	--	--
2/21/2019	Detection	0.151	207	43.2	0.18	6.9	1,060	1,722
5/30/2019	*	0.158	202	41.7	< 0.04 U1	6.1	1,120	1,546
7/24/2019	Detection	0.113	216	37	0.085 J1	6.0	1,127	1,864
2/17/2020	*	0.104	184	36.0	0.16	5.9	1,070	1,750
5/20/2020	Detection	0.115	250	47.7	0.15	5.7	1,190	1,890
10/14/2020	Detection	0.100	185	35.7	0.17	5.4	1,060	1,720
2/23/2021	*	0.098	168	--	0.17	5.6	--	--
6/2/2021	Detection	0.124	233	44.9	0.31	5.7	1,210	1,890
10/20/2021	Detection	0.104	164	37.3	0.16	5.1	1,040	1,710
6/28/2022	Detection	0.112	167	37.0	0.09 J1	5.2	1,050	1,740
11/1/2022	Detection	0.097	165	40.3	0.09 J1	5.7	1,110	1,690

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
* Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-17
Welsh - BASP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/26/2016	Background	< 0.93 U1	1.37501 J1	21	0.173275 J1	2	1	63	1.525	0.4023 J1	< 0.68 U1	0.37	0.032	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/27/2016	Background	1.13716 J1	< 1.05 U1	20	0.307264 J1	4	1	68	2.78	0.4135 J1	< 0.68 U1	0.374	0.02133 J1	1.04115 J1	4.56733 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	< 1.05 U1	31	0.175474 J1	0.848199 J1	3	58	2.358	0.3055 J1	< 0.68 U1	0.354	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/20/2016	Background	< 0.93 U1	< 1.05 U1	34	0.200656 J1	2	4	65	2.224	0.583 J1	< 0.68 U1	0.394	< 0.005 U1	0.322249 J1	3.34422 J1	< 0.86 U1
12/13/2016	Background	< 0.93 U1	< 1.05 U1	17	0.0498325 J1	3	0.816224 J1	68	2.384	0.5399 J1	< 0.68 U1	0.323	0.01485 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/17/2017	Background	< 0.93 U1	< 1.05 U1	14	0.0319852 J1	3	68	68	2.436	< 0.083 U1	< 0.68 U1	0.341	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/22/2017	Background	< 0.93 U1	< 1.05 U1	20	0.0665729 J1	2	1	73	2.288	< 0.083 U1	< 0.68 U1	0.331	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/6/2017	Background	< 0.93 U1	< 1.05 U1	10.33	< 0.02 U1	6.06	< 0.23 U1	74.8	1.598	< 0.083 U1	< 0.68 U1	0.329	0.013 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
- -: Not analyzed
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

APPENDIX 2

Where applicable, shown in this appendix the are results from statistical analyses, and a description of the statistical analysis method chosen. These statistical analyses are conducted separately for each constituent in each monitoring well.

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Memorandum

Date:	October 19, 2022
To:	David Miller (AEP)
Copies to:	Jill Parker-Witt (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Welsh Plant's Bottom Ash Storage Pond (BASP)

In accordance with the Texas Commission on Environmental Quality (TCEQ) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (30 TAC 352, "CCR rule"), the first semi-annual detection monitoring event of 2022 at the Bottom Ash Storage Pond (BASP), an existing CCR unit at the Welsh Power Plant located in Pittsburg, Texas, was completed on June 27-28, 2022. Based on the results, a two-of-two verification sampling was completed on August 26, 2022.

A data quality review was completed to assess if the data collected for this semiannual detection monitoring event met the objectives outlined in TCEQ Draft Technical Guidance No. 32 related to groundwater sampling and analysis[1]. The data were determined usable for supporting project objectives, as documented in the review memoranda provided in Attachment A.

Background values for the BASP were originally calculated in January 2018. After a minimum of four detection monitoring events, the results of those events were compared to the existing background and the dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix III parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the calculation of these revised background values are described in Geosyntec's *Statistical Analysis Summary* report, dated December 8, 2021.

[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Draft Technical Guidance No. 32. May 2020.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is only concluded if both samples in a series of two exceeds the UPL (or are below the LPL for pH). In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1 and noted exceedances are described in the list below.

- Sulfate concentrations exceeded the intrawell UPL of 82.8 mg/L in both the initial (83.6 mg/L) and second (160 mg/L) samples collected at AD-4C. Thus, an SSI over background is concluded for sulfate at AD-4C.

In response to the exceedance noted above, the Welsh BASP CCR unit will either transition to assessment monitoring or an alternative source demonstration (ASD) for sulfate will be conducted in accordance with 30 TAC 352.941(c). If the ASD is successful, the Welsh BASP will remain in detection monitoring.

The statistical analysis was conducted in accordance with 30 TAC 352.931 and completed within 90 days of sampling and analysis. A certification of these statistics by a qualified professional engineer is provided in Attachment B.

Table 1: Detection Monitoring Data Evalation
Welsh - Bottom Ash Storage Pond

Geosyntec Consultants, Inc.

Analyte	Unit	Description	AD-3	AD-4C		AD-16R
			6/28/2022	6/28/2022	8/26/2022	6/27/2022
Boron	mg/L	Intrawell Background Value (UPL)	0.0444	0.0481		0.0595
		Analytical Result	0.016	0.043	--	0.026
Calcium	mg/L	Intrawell Background Value (UPL)	1.31	1.19		2.95
		Analytical Result	0.68	1.08	--	0.34
Chloride	mg/L	Intrawell Background Value (UPL)	9.83	16.0		7.79
		Analytical Result	8.01	14.1	--	7.21
Fluoride	mg/L	Intrawell Background Value (UPL)	1.00	1.00		1.00
		Analytical Result	0.14	0.12	--	0.10
pH	SU	Intrawell Background Value (UPL)	5.3	5.7		4.8
		Intrawell Background Value (LPL)	3.9	4.1		2.7
		Analytical Result	3.9	4.8	--	3.2
Sulfate	mg/L	Intrawell Background Value (UPL)	9.54	82.8		75.7
		Analytical Result	2.55	**83.6**	**160**	46.5
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	136	301		251
		Analytical Result	120	280	--	170

Notes:
UPL: Upper prediction limit
LPL: Lower prediction limit
Bold values exceed the background value.
Background values are shaded gray.
--: Not measured

ATTACHMENT A
Data Quality Review Memoranda

Geosyntec consultants

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Memorandum

Date:	October 19, 2022
To:	David Miller (AEP)
Copies to:	Jill Parker-Witt (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Data Quality Review – Welsh Power Plant June 2022 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Welsh Power Plant, located in Pittsburg, Texas in June 2022. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the thirty-six (36) groundwater samples collected during the June 2022 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222057
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222059
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222060
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222061
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222084
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222085
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222086
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222087

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32[1] prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 222084, barium, boron, chromium, cobalt, and lithium were detected in the equipment blank sample "EQ BLANK - BACKGROUND" collected on 6/28/2022. The detected boron concentration in the equipment blank (0.027 mg/L) was more than 10% of the detected value in sample AD-5 (0.048 mg/L), which could result in high bias in the AD-5 boron results. Likewise, the detected chromium concentration in the equipment blank (0.84 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 222085, barium, boron, chromium, cobalt, and lithium were detected in the equipment blank sample "EQUIPMENT BLANK – PBAP" collected on 6/27/2022. The detected boron concentration in the equipment blank (0.024 mg/L) was more than 10% of the detected value in sample AD-9 (0.174 mg/L), which could result in high bias in the AD-9 boron results. Likewise, the detected chromium concentration in the equipment blank (0.84 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 222086, barium, boron, chromium, cobalt, and lithium were detected in the equipment blank sample "EQUIPMENT BLANK – LANDFILL" collected on 6/27/2022. The detected chromium concentration in the equipment blank (0.96 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 222087, barium, boron, chromium, and cobalt were detected in the equipment blank sample "EQUIPMENT BLANK – BASP" collected on 6/28/2022. The detected boron concentration in the equipment blank (0.024 mg/L) was more than 10% of

[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

the detected values for boron in all groundwater samples, which could result in high bias for all groundwater boron results. Likewise, the detected chromium concentration in the equipment blank (0.90 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 222085, the relative percent difference (RPD) for chromium concentrations from parent sample "AD-15" and duplicate sample "DUPLICATE – PBAP" was 27%. The AD-15 chromium results should be considered estimated.

- As reported in SDG 222086, the matrix spike (MS) recovery (68.2%) and matrix spike duplicate (MSD) recovery (68%) for beryllium were below the acceptable range of 75-125%. The associated sample (AD-11) was flagged M1: the associated MS or MSD recovery was outside acceptance limits. The AD-11 beryllium results should be considered estimated.

- As reported in SDG 222060, the RPD for total dissolved solids (TDS; 17.5%) in the laboratory duplicate was above the acceptable limit of 10%. The associated sample (AD-14) was flagged P1: the precision between duplicate results was above acceptance limits. The AD-14 TDS results should be considered estimated.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.

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Memorandum

Date:	October 19, 2022
To:	David Miller (AEP)
Copies to:	Jill Parker-Witt (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Data Quality Review – Welsh Power Plant August 2022 Sampling Event

This memorandum summarizes the findings of a data quality review for a groundwater sample collected at the Welsh Power Plant, located in Pittsburg, Texas in August 2022. The groundwater sample was collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). The sample was analyzed for sulfate, a 40 CFR 257 Appendix III constituent.

The following sample data groups (SDGs) were associated with the single groundwater sample collected during the August 2022 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222846

The data included in this SDG was reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32[1] prior to submittal of this data to TCEQ.

No data quality issues were identified. Based on these findings, the data reported in this SDG are considered accurate and complete and the data are considered usable for supporting project objectives.

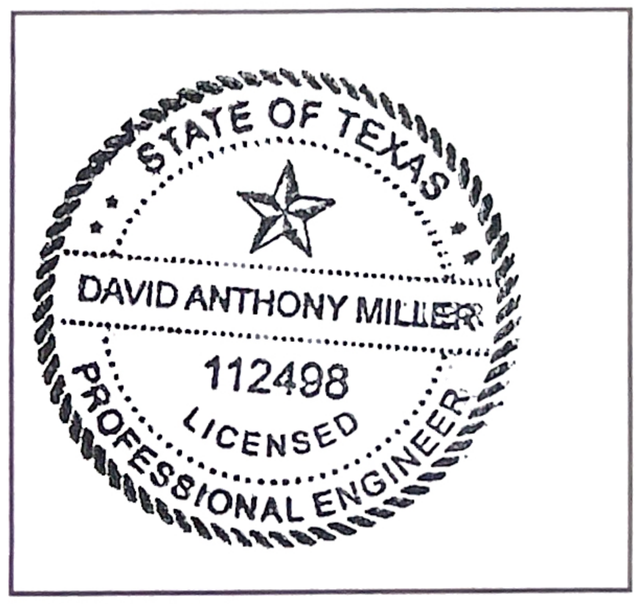
[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

ATTACHMENT B

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the December 8, 2021 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Welsh BASP CCR management area and that the requirements of 30 TAC 352.931(a) have been met.



DAVID ANTHONY MILLER

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

112498	TEXAS	11.07.22
License Number	Licensing State	Date

Geosyntec consultants

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Memorandum

Date:	January 18, 2023
To:	David Miller (AEP)
Copies to:	Jill Parker-Witt (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Data Quality Review – Welsh Power Plant October-November 2022 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Welsh Power Plant, located in Pittsburg, Texas in October and November 2022. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the twenty-one (21) groundwater samples collected during the October and November 2022 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223477
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223481
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223483
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223484
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223509
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223510
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223511
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223515

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32[1] prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 223509, chromium and cobalt were detected in the equipment blank sample "EQUIPMENT BLANK - BASP" collected on 11/1/2022. The detected chromium concentration in the equipment blank (0.53 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The detected cobalt concentration in the equipment blank (0.145 µg/L) was more than 10% of the detected value in sample AD-4C (0.757 µg/L), which could result in high bias in the AD-4C cobalt results.

- As reported in SDG 222510, barium, boron, chromium, cobalt, lithium, and molybdenum were detected in the equipment blank sample "EB - Background" collected on 11/1/2022. The detected boron concentration in the equipment blank (0.01 mg/L) was more than 10% of the detected value in samples AD-5 (0.041 mg/L) and AD-17 (0.097 mg/L), which could result in high bias in the AD-5 and AD-17 boron results. Likewise, the detected chromium concentration in the equipment blank (0.52 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The detected cobalt concentration in the equipment blank (0.161 µg/L) was more than 10% of the detected value in samples AD-1 (1.17 µg/L) and "Dup-Background" (1.17 µg/L), which could result in high bias in the AD-1 and duplicate cobalt results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 223511, chromium, cobalt, lithium, and molybdenum were detected in the equipment blank sample "EQUIPMENT BLANK – PBAP" collected on 10/31/2022. The detected chromium concentration in the equipment blank (0.53 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The estimated molybdenum concentration in the equipment blank (0.2 µg/L) was more than 10% of the estimated value in sample AD-8 (0.2 µg/L), which could result in high bias in the AD-8 molybdenum results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

[1] TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

- As reported in SDG 223513, chromium, cobalt, lithium, and molybdenum were detected in the equipment blank sample "EQUIPMENT BLANK – LF" collected on 10/31/2022. The detected chromium concentration in the equipment blank (0.7 µg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The estimated molybdenum concentration in the equipment blank (0.3 µg/L) was more than 10% of the estimated value in samples AD-13 (0.2 µg/L) and AD-14 (0.4 µg/L), which could result in high bias in the AD-13 and AD-14 molybdenum results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 223510, the relative percent difference (RPD) for chromium concentrations from parent sample "AD-1" and duplicate sample "Dup Background" was 41%. The AD-1 chromium results should be considered estimated.

- As reported in SDG 223510, the RPD for radium-226 (77.1%) in the laboratory duplicate was above the acceptable limit of 25%. The "AD-1" radium-226 results should be considered estimated.

- As reported in SDG 223509, the matrix spike (MS) recovery (47.8%) and matrix spike duplicate (MSD) recovery (35.3%) for lithium were below the acceptable range of 75-125%. The associated sample (AD-3) was flagged M1: the associated MS or MSD recovery was outside acceptance limits. The AD-3 lithium results should be considered estimated.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.

APPENDIX 3 NA

Alternate source demonstration(s) included in this appendix. Alternate sources are sources or reasons that explain that statistically significant increases over background or statistically significant levels above the groundwater protection standard are not attributable to the CCR unit.

APPENDIX 4 - NA

A summary of any transition between monitoring programs or an alternate monitoring frequency, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring

APPENDIX 5- NA

Reports documenting monitoring well plugging and abandonment or well installation are included in the appendix. or other information required to be included in the annual report such as program related notification or assessment of corrective measures.

APPENDIX 6

Field reports and analytical reports.

CCR Groundwater Monitoring Well Inspection Form

Facility: APP WELSH PP Sampling Period: JUNE 2022

Sampling Contractor: EAGLE Signature: [signature]

Well No.	Well Locked	Fastener and Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Protective Cover, Barriers and Pad in Good Shape	Well Properly Labeled	Well Cap Present and Vented*	Comments: NONE OF THE WELLS HAVE WEEP HOLE, VENTED CAP, INSIDE LABEL	DTW
AD-13	S	S	S	S	S	S	S		
AD-8	S	S	S	S	S	S	S		
AD-9	S	S	S	S	S	S	S		
AD-6	S	S	S	S	S	S	S		13.99
AD-5	S	S	S	S	S	S	S		
AD-4	S	S	S	S	S	S	S		18.47
AD-4A	S	S	S	S	S	S	S		18.59
AD-4B	S	S	S	S	S	S	S		9.73
AD-4C	S	S	S	S	S	S	S		
AD-1	S	S	S	S	S	S	S		

*Not all wells will be vented, especially flush mounted wells. If that is the case, please note "flush mount well" in the comments.

CCR Groundwater Monitoring Well Inspection Form

Facility: Welsh

Sampling Period: June 2022

Sampling Contractor: Eagle

Signature:

Well No.	Well Locked	Fastener and Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Protective Cover, Barriers and Pad in Good Shape	Well Properly Labeled	Well Cap Present and Vented*	Comments
								All wells -No weep holes -No fill -No internal label
AD-15	S	S	S	S	S	S	S	
AD-10	S	S	S	S	S	S	S	DTW - 20.03
AD-11	S	S	S	S	S	S	S	
AD-14	S	S	S	S	S	S	S	-Has fill
AD-16R	S	S	S	S	S	S	S	-Has internal label
AD-2	S	S	S	S	S	S	S	DTW - 15.60 -Has fill -No bollards
AD-3	S	S	S	S	S	S	S	-No Bollards
AD-7	S	S	S	S	S	S	S	DTW 17.49
AD-12	S	S	S	S	S	S	S	DTW 21.68
AD-17	S	S	S	S	S	S	S	[illegible]
AD-18	S	S	S	S	S	S	S	DTW 8.34
AD-22	N/A	N/A	N/A	U	S	U	S	DTW 16.58 - Flush Mount well

*Not all wells will be vented, especially flush mounted wells. If that is the case, please note "flush mount well" in the comments.

AD-23	N/A	N/A	N/A	U	S	U	S	DTW	10.31

Facility Name	AEP WELSH PP
Sample by	Kenny McDonald

Sample Location ID	AD-01

Depth to water, feet (TOC)	18.71
Measured Total Depth, feet (TOC)	28.75

Depth to water date	06/28/22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1118	18.89	188	4.91	253	13.2	3.89	345	29.27		
1123	18.96	188	4.96	246	0.0	2.54	338	29.18		
1128	19.00	188	4.91	247	0.0	2.49	334	27.44		
1133	19.02	188	4.87	247	0.0	2.43	329	27.38		

Total volume purged	
Sample appearance	CLEAR
Sample time	1135
Sample date	06/28/22

BACKGROUND DUPLICATE 1430

Facility Name	Well
Sample by	Matt Hamilton

Depth to water, feet (TOC)	9.99
Measured Total Depth, feet (TOC)	20.13

Sample Location ID	AD-3
Depth to water date	6-2f-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1042	10.91	300	4.11	70	14.6	1.24	253	27.74		
1047	10.45	300	3.95	67	0	0.54	301	26.31		
1052	10.96	300	3.91	64	0	0.51	305	26.27		

Total volume purged	
Sample appearance	clear
Sample time	1055
Sample date	6-2f-22

Facility Name	AEP WELSH PP
Sample by	Kenny McDonald

Sample Location ID	AP-04C

Depth to water, feet (TOC)	9.82
Measured Total Depth, feet (TOC)	18.82

Depth to water date	06/28/22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1004	10.06	190	4.86	302	71.3	7.50	255	27.89		
1009	10.10	190	4.82	297	11.6	2.84	276	27.93		
1014	10.12	190	4.80	292	9.4	2.93	281	28.16		
1019	10.18	190	4.84	291	10.2	2.87	305	28.19		

Total volume purged	
Sample appearance	CLEAR
Sample time	1021
Sample date	06/28/22

BASP DUPLICATE 1400

Facility Name	APP WELSH PP
Sample by	KENNY McDONALD

Sample Location ID	AD-S

Depth to water, feet (TOC)	15.06
Measured Total Depth, feet (TOC)	32.88

Depth to water date	06/28/22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0837	15.91	104	5.81	580	152	7.61	290	23.31		
0842	16.88	104	5.88	574	149	4.68	127	23.14		
			WON'T HOLD WATER LEVEL							

Total volume purged	
Sample appearance	BROWNISH
Sample time	0905
Sample date	06/28/22

Facility Name	Walsh
Sample by	Matt Hamilton

Depth to water, feet (TOC)	27.11
Measured Total Depth, feet (TOC)	31.30

Sample Location ID	MW-16R
Depth to water date	6-27-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1233	27.39	150	3.28	227	0	3.10	308	30.06		
1238	27.51	150	3.17	206	3.2	1.84	314	25.64		
1243	27.71	150	3.16	199	3.4	1.86	314	25.29		

Total volume purged	
Sample appearance	clear
Sample time	1245
Sample date	6-27-22

Facility Name	Welsh
Sample by	Matt Hamilla

Depth to water, feet (TOC)	23.62
Measured Total Depth, feet (TOC)	41.47

Sample Location ID	AD-17
Depth to water date	6-28-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1137	~~24.41~~	100	5.09	1,720	29.0	2.44	101	26.49		
1142	25.02	100	5.17	1,86-	23.4	1.03	52	23.48		
				Well not Hold						

Total volume purged	
Sample appearance	clear
Sample time	1229
Sample date	6-28-22

Facility Name	Welsh
Sample by	M. Hamill

Depth to water, feet (TOC)	9.07
Measured Total Depth, feet (TOC)	

Sample Location ID	AD-4C
Depth to water date	8-26-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
933	9.27	200	5.52	515	21.7	0.05	25	24.53		
938	9.40	200	3.73	503	29.8	0.02	273	25.31		
943	9.46	200	3.66	507	61.7	0.05	248	25.92		
948	9.48	200	3.65	522	61.1	0.57	221	25.43		
953	9.49	200	3.64	524	60.2	0.43	202	25.93		
958	9.50	200	3.62	527	58.2	0.31	191	25.94		
1003	9.50	200	3.62	528	58.3	0.35	184	25.95		
1008	9.51	200	3.62	529	58.2	0.37	180	25.94		

Total volume purged	
Sample appearance	clear
Sample time	1010
Sample date	8-26-22

AD-5 - 14.98
AD-4 - 17.77
AD-2 - 17.42
AD-4B 8.94
AD-4A - 17.90
AD-1 - 18.56
AD-16R 27.68
AD-3 - 10.30
AD-17 - 23.62

CCR Groundwater Monitoring Well Inspection Form

Facility: Welsh

Sampling Period: Oct 2-22

Sampling Contractor: Eagle

Signature: [signature]

Well No.	Well Locked	Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Housing, and Pad in Good Shape	Well Properly Labeled	Well cap present	Comments
AD-15	✓	✓	✓	✓	✓	✓	✓	
AD-16	✓	✓	✓	✓	✓	✓	✓	DTW-19.57
AD-11	✓	✓	✓	✓	✓	✓	✓	
AD-14	✓	✓	✓	✓	✓	✓	✓	
AD-16R	✓	✓	✓	✓	✓	✓	✓	
AD-7	✓	✓	✓	✓	✓	✓	✓	DTW 17.65
AD-3	✓	✓	✓	✓	✓	✓	✓	
AD-2	✓	✓	✓	✓	✓	✓	✓	DTW 15.79 no bollards
AD-17	✓	✓	✓	✓	✓	✓	✓	
AD-18	✓	✓	✓	✓	✓	✓	✓	DTW-10.49
AD-22	✓	✓	✓		✓	✓	✓	DTW 11.09
AD-23	✓	✓	✓		✓	✓	✓	DTW-12.22

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

CCR Groundwater Monitoring Well Inspection Form

Facility: AEP WELSH PP

Sampling Period: OCTOBER 31 - NOV 1, 2022

Sampling Contractor: EAGLE

Signature: [signature]

Well No.	Well Locked	Lock Functioning	Well Locked After Sampling	Access to Well Maintained	Well Casing, Housing, and Pad in Good Shape	Well Properly Labeled	Well cap present	Comments
AD-08	S	S	S	S	S	S	S	
AD-09	S	S	S	S	S	S	S	
AD-13	S	S	S	-	S	S	S	NEEDS WEEDEATIN G
AD-05	S	S	S	S	S	S	S	
AD-04C	S	S	S	S	S	S	S	
AD-04	S	S	S	S	S	S	S	17.63
AD-01	S	S	S			S	S	NEEDS WEEDEATING NOVSING DEBRIS
AD-12	S	S	S	S	S	S	S	22.61
AD-06	S	S	S	S	S	S	S	13.69

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

Facility Name	AGP WELLHEAD
Sample by	KENNY McDONALD

Sample Location ID	AD-01

Depth to water, feet (TOC)	19.40
Measured Total Depth, feet (TOC)	28.71

Depth to water date	11/01/22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1041	19.52	220	4.83	221	15.2	5.21	272	19.62		
1046	19.82	220	4.76	216	3.7	2.84	276	19.82		
1051	19.91	220	4.75	217	3.6	2.86	281	19.87		
1056	20.13	220	4.75	214	3.8	2.81	288	19.91		

Total volume purged	
Sample appearance	CLEAR
Sample time	1058
Sample date	11/01/22

BACKGROUND DUPLICATE 1400

Facility Name	Walsh
Sample by	Matt Hamilton

Depth to water, feet (TOC)	9.98
Measured Total Depth, feet (TOC)	20.13

Sample Location ID	AD-3
Depth to water date	11-1-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
951	10.99	300	4.22	66	8	3.04	333	19.02		
956	11.31	300	4.00	126	27	0.62	341	21.15		
1001	11.40	300	4.12	133	26.7	0.52	332	21.53		
1006	11.46	300	4.27	112	23.6	0.60	322	21.65		
1011	11.50	300	4.31	102	14.8	0.69	315	21.73		
1016	11.53	300	4.33	99	7.6	0.68	311	21.77		
1021	11.55	300	4.35	99	7.5	0.65	309	21.78		

Total volume purged	
Sample appearance	cloudy
Sample time	1023
Sample date	11-1-22

Dup - BASP

1045

Facility Name	AEP WELSH AP
Sample by	Kenny McDonald

Sample Location ID	AD-04C

Depth to water, feet (TOC)	8.82
Measured Total Depth, feet (TOC)	18.82

Depth to water date	11/01/22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0939	9.01	220	4.74	395	24.6	7.40	191	21.51		
0944	9.17	220	4.80	395	17.1	2.23	187	21.93		
0949	9.29	220	4.82	395	16.3	2.20	184	21.97		
0954	9.42	220	4.86	397	16.2	2.15	181	22.04		

Total volume purged	
Sample appearance	CLEAR
Sample time	0956
Sample date	11/01/22

Facility Name	ACP WELSH PP
Sample by	Kerry McDonald

Sample Location ID	AD-05

Depth to water, feet (TOC)	14.59
Measured Total Depth, feet (TOC)	32.88

Depth to water date	11/01/22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
0831	15.71	110	5.98	691	110	4.71	141	20.17		
0836	16.48	110	5.87	682	107	2.41	137	20.23		
				WON'T HOLD WATER LEVEL						

Total volume purged	
Sample appearance	SLIGHTLY TURBID
Sample time	0856
Sample date	11/01/22

Facility Name	Welch
Sample by	Matt Hamilton

Depth to water, feet (TOC)	27.81
Measured Total Depth, feet (TOC)	@31.30

Sample Location ID	AD-16R
Depth to water date	11-1-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
901	28.32	150	4.93	225	0	5.75	248	19.07		
906	28.45	150	3.60	184	3.3	1.62	363	14.14		
911	28.58	150	3.46	180	3.4	1.33	368	14.26		
916	28.67	150	3.41	178	3.3	1.29	370	14.31		

Total volume purged	
Sample appearance	clear
Sample time	916
Sample date	11-1-22

Facility Name	Welsh
Sample by	Matt Hamilton

Depth to water, feet (TOC)	23.74
Measured Total Depth, feet (TOC)	41.47

Sample Location ID	AD-17
Depth to water date	11-1-22

Purge Stabilization Data

Time	Water Depth (from TOC)	Flow Rate (mL/min)	pH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
1114	24.52	100	5.68	1,816	72.2	1.62	190	19.58		
1119	25.31	100	5.68	1,575	52.9	0.56	61	19.47		
				Meter not	Held					

Total volume purged	
Sample appearance	clear
Sample time	1225
Sample date	11-1-22

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222057 **Customer: Welsh Power Station** **Date Reported: 12/27/2022**

Customer Sample ID: AD-1 Customer Description: TG-32
Lab Number: 222057-001 Preparation:
Date Collected: 06/28/2022 12:35 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.32	mg/L	2	0.04	0.02		CRJ	07/13/2022 00:06	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.22	mg/L	2	0.06	0.02		CRJ	07/13/2022 00:06	EPA 300.1 -1997, Rev. 1.0
Sulfate	74.7	mg/L	2	0.40	0.06		CRJ	07/13/2022 00:06	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	180	mg/L	1	50	20		SDW	07/01/2022 14:30	SM 2540C-2015

Customer Sample ID: AD-5 Customer Description: TG-32
Lab Number: 222057-002 Preparation:
Date Collected: 06/28/2022 10:05 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15.3	mg/L	2	0.04	0.02		CRJ	07/12/2022 23:13	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.15	mg/L	2	0.06	0.02		CRJ	07/12/2022 23:13	EPA 300.1 -1997, Rev. 1.0
Sulfate	146	mg/L	10	2.0	0.3		CRJ	07/12/2022 22:47	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	310	mg/L	2	100	40		SDW	07/01/2022 14:38	SM 2540C-2015

Customer Sample ID: AD-17 Customer Description: TG-32
Lab Number: 222057-003 Preparation:
Date Collected: 06/28/2022 13:29 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	37.0	mg/L	5	0.10	0.05		CRJ	07/12/2022 21:54	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.09	mg/L	5	0.15	0.05	J1	CRJ	07/12/2022 21:54	EPA 300.1 -1997, Rev. 1.0
Sulfate	1050	mg/L	50	10	2		CRJ	07/12/2022 21:28	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	1740	mg/L	2	100	40		SDW	07/01/2022 14:48	SM 2540C-2015

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222057 **Customer: Welsh Power Station** **Date Reported: 12/27/2022**

Customer Sample ID: DUPLICATE - BACKGROUND
Customer Description: TG-32
Lab Number: 222057-004
Preparation:
Date Collected: 06/28/2022 15:30 EDT
Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.25	mg/L	2	0.04	0.02		CRJ	07/12/2022 21:01	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.22	mg/L	2	0.06	0.02		CRJ	07/12/2022 21:01	EPA 300.1 -1997, Rev. 1.0
Sulfate	73.0	mg/L	2	0.40	0.06		CRJ	07/12/2022 21:01	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

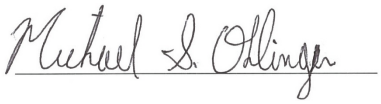
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	180	mg/L	1	50	20		SDW	07/01/2022 14:50	SM 2540C-2015

222057
Job Comments:

Original report issued 8/9/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222057

Customer: Welsh Power Station

Date Reported: 12/27/2022

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh Background
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (In Calendar Days)
Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 222057

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	40 mL Glass vial or 125 mL PTFE lined bottle, HCL**, pH<2 Hg			Sample Specific Notes:
AD-1	6/28/2022	1135	G	GW	1				X					TG-32 needed
AD-5	6/28/2022	905	G	GW	1				X					
AD-17	6/28/2022	1229	G	GW	1				X					
DUPLICATE - BACKGROUND	6/28/2022	1430	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by: Matt	Company: Eagle	Date/Time: 6/21/22 1600	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received At Laboratory by: Michael Ohlinger	Date/Time: 6/30/22 10:30AM

AEP WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS FedEX USPS
	Other _____

Plant/Customer Welsh Number of Plastic Containers: 4

Opened By Misgina/Michael Number of Glass Containers: _____

Date/Time 06/30/22 10:30 Number of Mercury Containers: _____

Were all temperatures within 0-6°C? (Y) / N or N/A Initial: MGK (on ice) / no ice

(IR Gun Ser# 210441568, *Expir.5/27/2023*) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A Initial & Date: MGK 06/30/22

pH paper (circle one): MQuant pH Cat 1.09535.0001 lot HC904495 [OR] Lab rat pH Cat # LRS -4801 Lot X000RWDG21 ✓

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 229057 Initial & Date & Time : _____

Comments: _____

Logged by MSO

Reviewed by JAB

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Timothey E. Arnold	Timothy E. Arnold	Chemist Principle	7/13/2022
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Wesh Background

Reviewer Name: Timothy E. Arnold

LRC Date: 7/13/2022

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207091

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	YES	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	YES	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	YES	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	YES	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	YES	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	YES	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	YES	
	I	Were MS/MSD RPDs within laboratory QC limits?	YES	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	YES	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Wesh Background

Reviewer Name: Timothy E. Arnold

LRC Date: 7/13/2022

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207091

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Wesh Background

Reviewer Name: Timothy E. Arnold

LRC Date: 7/13/2022

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207091

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger		Chemist	8/9/22
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Michael Ohlinger

LRC Date: 8/9/22

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207067

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	No	ER1
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207067

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Michael Ohlinger

LRC Date: 8/9/22

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207067

Exception Report No.	Description
ER1	The precision between the duplicate results was above acceptance limits.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222084 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: AD-1 Customer Description: TG-32
Lab Number: 222084-001 Preparation:
Date Collected: 06/28/2022 12:35 EDT Date Received: 07/01/2022 11:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03	µg/L	1	0.10	0.02	J1	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Arsenic	0.26	µg/L	1	0.10	0.03		GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Barium	85.4	µg/L	1	0.20	0.05		GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Beryllium	0.995	µg/L	1	0.050	0.007		GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Boron	0.768	mg/L	1	0.050	0.009		GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Cadmium	0.030	µg/L	1	0.020	0.004		GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Calcium	6.76	mg/L	1	0.05	0.02		GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Chromium	0.37	µg/L	1	0.20	0.04		GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Cobalt	2.34	µg/L	1	0.020	0.003		GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Lead	0.33	µg/L	1	0.20	0.05		GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Lithium	0.00855	mg/L	1	0.00020	0.00005		GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	1	5	2	J1	JAB	07/19/2022 15:04	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Selenium	8.35	µg/L	1	0.50	0.09		GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.04	J1	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	3.03	pCi/L	0.47	0.44		ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	91.8	%						
Radium-228	0.66	pCi/L	0.16	0.51		TTP	07/12/2022 16:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222084 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: AD-5
Customer Description: TG-32
Lab Number: 222084-002
Preparation:
Date Collected: 06/28/2022 10:05 EDT
Date Received: 07/01/2022 11:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Arsenic	3.01	µg/L	1	0.10	0.03		GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Barium	51.8	µg/L	1	0.20	0.05		GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.032	µg/L	1	0.050	0.007	J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Boron	0.048	mg/L	1	0.050	0.009	J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Calcium	32.9	mg/L	1	0.05	0.02		GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.22	µg/L	1	0.20	0.04		GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Cobalt	12.8	µg/L	1	0.020	0.003		GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.161	mg/L	1	0.00020	0.00005		GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	07/19/2022 15:07	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.1	µg/L	1	0.5	0.1	J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.04	J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.06	pCi/L	0.38	0.47		ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.0	%						
Radium-228	-0.10	pCi/L	0.33	1.12		TTP	07/12/2022 16:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	85.1	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222084 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: AD-17
Customer Description: TG-32
Lab Number: 222084-003
Preparation:
Date Collected: 06/28/2022 13:29 EDT
Date Received: 07/01/2022 11:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Arsenic	0.53	µg/L	1	0.10	0.03		GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Barium	12.6	µg/L	1	0.20	0.05		GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.040	µg/L	1	0.050	0.007	J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Boron	0.112	mg/L	1	0.050	0.009		GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.011	µg/L	1	0.020	0.004	J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Calcium	167	mg/L	1	0.05	0.02		GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.40	µg/L	1	0.20	0.04		GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Cobalt	41.3	µg/L	1	0.020	0.003		GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Lead	0.12	µg/L	1	0.20	0.05	J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.267	mg/L	1	0.00020	0.00005		GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	1	5	2	J1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.1	µg/L	1	0.5	0.1	J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	5.26	pCi/L	0.59	0.39		ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	98.4	%						
Radium-228	1.28	pCi/L	0.15	0.45		TTP	07/12/2022 16:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.1	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222084 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: DUPLICATE - BACKGROUND
Customer Description: TG-32
Lab Number: 222084-004
Preparation:
Date Collected: 06/28/2022 15:30 EDT
Date Received: 07/01/2022 11:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03	µg/L	1	0.10	0.02	J1	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Arsenic	0.26	µg/L	1	0.10	0.03		GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Barium	82.3	µg/L	1	0.20	0.05		GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Beryllium	0.852	µg/L	1	0.050	0.007		GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Boron	0.779	mg/L	1	0.050	0.009		GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Cadmium	0.032	µg/L	1	0.020	0.004		GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Calcium	6.56	mg/L	1	0.05	0.02		GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.32	µg/L	1	0.20	0.04		GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Cobalt	2.35	µg/L	1	0.020	0.003		GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Lead	0.38	µg/L	1	0.20	0.05		GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Lithium	0.00837	mg/L	1	0.00020	0.00005		GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	1	5	2	J1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Selenium	7.92	µg/L	1	0.50	0.09		GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	1	0.20	0.04	J1	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222084 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: EQ BLANK - BACKGROUND
Customer Description: TG-32
Lab Number: 222084-005
Preparation:
Date Collected: 06/28/2022 12:09 EDT
Date Received: 07/01/2022 11:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Barium	0.06	µg/L	1	0.20	0.05	J1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Boron	0.027	mg/L	1	0.050	0.009	J1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Chromium	0.84	µg/L	1	0.20	0.04		GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Cobalt	0.009	µg/L	1	0.020	0.003	J1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Lithium	0.00008	mg/L	1	0.00020	0.00005	J1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4

222084
Job Comments:

Original report issued 8/10/2022. Report reissued with amended matrix spike precision calculations.

Water Analysis Report

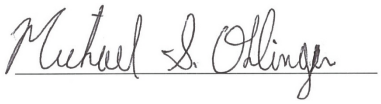
Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222084 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh Background
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (In Calendar Days) Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 222084

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 — B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3 — dissolved Fe and Mn	1 L bottle, Cool, 0-6°C — TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 — Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 — Hg			Sample Specific Notes:
AD-1	6/28/2022	1135	G	GW	8		X			X	X			Routine (28 days)
AD-5	6/28/2022	905	G	GW	5		X			X	X			TG-32 needed
AD-17	6/28/2022	1229	G	GW	5		X			X	X			
DUPLICATE - BACKGROUND	6/28/2022	1430	G	GW	2		X				X			
EQUIPMENT BLANK - BACKGROUND	6/28/2022	1109	G	GW	2		X				X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4	2			

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by: [signature]	Company: Engle	Date/Time: 6/29/22 1600	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 7/1/22 10:30

WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Welsh Number of Plastic Containers: 17

Opened By MSO Number of Glass Containers: 5

Date/Time 7/1/22 10:30AM Number of Mercury Containers: -

Were all temperatures within 0-6°C? Y / N or (N/A) Initial: _____ on ice / (no ice)

(IR Gun Ser# 210441568, *Expir.5/27/2023)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A **Initial & Date:** _____

pH paper (circle one): MQuant pH Cat 1.09535.0001 lot HC904495 _____ [OR] Lab rat pH Cat # LRS -4801 Lot X000RWDG21 _____

- Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 222084 Initial & Date & Time : _____

Comments: _____

Logged by MSO _____

_____

Reviewed by MGC _____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Susann Sulzmann	S. Sulzmann	Chemist	7-21-22
Name (printed)	Signature	Official Title	Date

Mercury Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power

Reviewer Name: Susann Sulzmann

LRC Date: 7-21-22

Laboratory Job Number: 222084

Prep Batch Number(s): PB220708O6

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power

Reviewer Name: Susann Sulzmann

LRC Date: 7-21-22

Laboratory Job Number: 220084

Prep Batch Number(s): PB220708O6

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	YES	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Mercury Laboratory Review Checklist

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power

Reviewer Name: Susann Sulzmann

LRC Date: 7-21-22

Laboratory Job Number: 222084

Prep Batch Number(s): PB22070806

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: ◯ This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Jonathan Barnhill	Jonathan Barnhill	Lab Supervisor	8-2-2022
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 8-2-2022

Laboratory Job Number: 222084

Prep Batch Number(s): PB22070706 PB22072101 QC2207151 QC2207182

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?		
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

ICP-MS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 8-2-2022

Laboratory Job Number: 222084

Prep Batch Number(s): PB22070706 PB22072101 QC2207151 QC2207182

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 8-2-2022

Laboratory Job Number: 222084

Prep Batch Number(s): PB22070706 PB22072101 QC2207151 QC2207182

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222061 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: AD-3 Customer Description: TG-32
Lab Number: 222061-001 Preparation:
Date Collected: 06/28/2022 11:55 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8.01	mg/L	2	0.04	0.02		CRJ	07/14/2022 07:04	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14	mg/L	2	0.06	0.02		CRJ	07/14/2022 07:04	EPA 300.1 -1997, Rev. 1.0
Sulfate	2.55	mg/L	2	0.40	0.06		CRJ	07/14/2022 07:04	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	120	mg/L	1	50	20		SDW	07/01/2022 16:12	SM 2540C-2015

Customer Sample ID: AD-4c Customer Description: TG-32
Lab Number: 222061-002 Preparation:
Date Collected: 06/28/2022 11:21 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	14.1	mg/L	2	0.04	0.02		CRJ	07/14/2022 07:30	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12	mg/L	2	0.06	0.02		CRJ	07/14/2022 07:30	EPA 300.1 -1997, Rev. 1.0
Sulfate	83.6	mg/L	2	0.40	0.06		CRJ	07/14/2022 07:30	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	280	mg/L	1	50	20		SDW	07/01/2022 16:21	SM 2540C-2015

Customer Sample ID: AD-16R Customer Description: TG-32
Lab Number: 222061-003 Preparation:
Date Collected: 06/27/2022 13:45 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	7.21	mg/L	2	0.04	0.02		CRJ	07/14/2022 08:50	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.10	mg/L	2	0.06	0.02		CRJ	07/14/2022 08:50	EPA 300.1 -1997, Rev. 1.0
Sulfate	46.5	mg/L	2	0.40	0.06		CRJ	07/14/2022 08:50	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	170	mg/L	1	50	20		SDW	07/01/2022 16:24	SM 2540C-2015

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222061 **Customer: Welsh Power Station** **Date Reported: 12/29/2022**

Customer Sample ID: DUPLICATE - BASP
Customer Description: TG-32
Lab Number: 222061-004
Preparation:
Date Collected: 06/28/2022 15:00 EDT
Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	14.1	mg/L	2	0.04	0.02		CRJ	07/14/2022 07:57	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12	mg/L	2	0.06	0.02		CRJ	07/14/2022 07:57	EPA 300.1 -1997, Rev. 1.0
Sulfate	83.8	mg/L	2	0.40	0.06		CRJ	07/14/2022 07:57	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

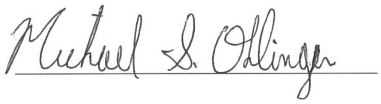
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	280	mg/L	1	50	20		SDW	07/01/2022 16:30	SM 2540C-2015

222061
Job Comments:

Original report issued 8/2/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh BASP
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (In Calendar Days) Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 222061

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca	500 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	40 mL Glass vial or 250 mL PTFE lined bottle, HCL**, pH<2 Hg	filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn		Sample Specific Notes:
AD-3	6/28/2022	1055	G	GW	1				X					TG-32 needed
AD-4c	6/28/2022	1021	G	GW	1				X					
AD-16R	6/27/2022	1245	G	GW	1				X					
DUPLICATE - BASP	6/28/2022	1400	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company: Eagle	Date/Time: 6/29/22 16:00	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 6/30/22 10:30AM

AEP WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS FedEX USPS
	Other _____

Plant/Customer Welsh Number of Plastic Containers: 4

Opened By Mishra/Michael Number of Glass Containers: _____

Date/Time 06/30/22 10:30 Number of Mercury Containers: _____

Were all temperatures within 0-6°C? (Y) / N or N/A Initial: MBK (on ice) / no ice

(IR Gun Ser# 210441568, *Expir.5/27/2023*) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A Initial & Date: MBK 06/30/22

pH paper (circle one): MQuant pH Cat 1.09535.0001 lot HC904495 _____ [OR] Lab rat pH Cat # LRS -4801 Lot X000RWDG21 ✓

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Initial & Date & Time : _____

Lab ID# 222061

Comments: _____

Logged by MSJ

Reviewed by GAB

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Timothy E. Arnold	Timothy E. Arnold	Chemist Principle	07/15/2022
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh PBAP

Reviewer Name: Timothy E. Arnold

LRC Date: 07/15/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207113

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh PBAP

Reviewer Name: Timothy E. Arnold

LRC Date: 07/15/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207113

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh PBAP

Reviewer Name: Timothy E. Arnold

LRC Date: 07/15/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207113

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger	Michael Ohlinger	Chemist	8/2/22
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 8/2/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207068

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207068

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 8/2/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207068

Exception Report No.	Description

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

[3] NA - Not applicable; NR - Not reviewed.

[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222087 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: AD-3 | Customer Description: TG-32
Lab Number: 222087-001 | Preparation:
Date Collected: 06/28/2022 11:55 EDT | Date Received: 07/01/2022 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Arsenic	0.53	µg/L	1	0.10	0.03		GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Barium	33.9	µg/L	1	0.20	0.05		GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Beryllium	0.177	µg/L	1	0.050	0.007		GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Boron	0.016	mg/L	1	0.050	0.009	J1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Cadmium	0.036	µg/L	1	0.020	0.004		GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Calcium	0.68	mg/L	1	0.05	0.02		GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Chromium	0.51	µg/L	1	0.20	0.04		GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Cobalt	1.14	µg/L	1	0.020	0.003		GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Lead	0.17	µg/L	1	0.20	0.05	J1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Lithium	0.0113	mg/L	1	0.00020	0.00005		GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Mercury	<200	ng/L	100	500	200	U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Selenium	0.21	µg/L	1	0.50	0.09	J1	GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.72	pCi/L	0.22	0.37		ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.1	%						
Radium-228	0.09	pCi/L	0.13	0.43		TTP	07/20/2022 15:35	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

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Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222087 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: AD-4c
Customer Description: TG-32
Lab Number: 222087-002
Preparation:
Date Collected: 06/28/2022 11:21 EDT
Date Received: 07/01/2022 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Arsenic	0.44	µg/L	1	0.10	0.03		GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Barium	52.9	µg/L	1	0.20	0.05		GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Beryllium	0.125	µg/L	1	0.050	0.007		GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Boron	0.043	mg/L	1	0.050	0.009	J1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Cadmium	0.080	µg/L	1	0.020	0.004		GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Calcium	1.08	mg/L	1	0.05	0.02		GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Chromium	0.82	µg/L	1	0.20	0.04		GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Cobalt	0.556	µg/L	1	0.020	0.003		GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Lead	0.16	µg/L	1	0.20	0.05	J1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Lithium	0.00506	mg/L	1	0.00020	0.00005		GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Mercury	<200	ng/L	100	500	200	U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Selenium	0.39	µg/L	1	0.50	0.09	J1	GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.30	pCi/L	0.28	0.39		ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	103	%						
Radium-228	0.32	pCi/L	0.13	0.41		TTP	07/20/2022 15:35	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	85.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222087 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: AD-16R
Customer Description: TG-32
Lab Number: 222087-003
Preparation:
Date Collected: 06/27/2022 13:45 EDT
Date Received: 07/01/2022 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Arsenic	0.47	µg/L	1	0.10	0.03		GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Barium	42.4	µg/L	1	0.20	0.05		GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Beryllium	0.911	µg/L	1	0.050	0.007		GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Boron	0.026	mg/L	1	0.050	0.009	J1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Cadmium	0.723	µg/L	1	0.020	0.004		GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Calcium	0.34	mg/L	1	0.05	0.02		GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Chromium	0.74	µg/L	1	0.20	0.04		GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Cobalt	29.4	µg/L	1	0.020	0.003		GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Lead	0.17	µg/L	1	0.20	0.05	J1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Lithium	0.0187	mg/L	1	0.00020	0.00005		GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Mercury	33	ng/L	1	5	2		JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Selenium	0.83	µg/L	1	0.50	0.09		GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Thallium	0.50	µg/L	1	0.20	0.04		GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	12.50	pCi/L	0.92	0.44		ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.2	%						
Radium-228	2.27	pCi/L	0.19	0.45		TTP	07/20/2022 15:35	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.9	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222087 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: DUPLICATE - BASP
Customer Description: TG-32
Lab Number: 222087-004
Preparation:
Date Collected: 06/28/2022 15:00 EDT
Date Received: 07/01/2022 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.42	µg/L	1	0.10	0.03		GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Barium	53.5	µg/L	1	0.20	0.05		GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.127	µg/L	1	0.050	0.007		GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Boron	0.041	mg/L	1	0.050	0.009	J1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.082	µg/L	1	0.020	0.004		GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Calcium	1.06	mg/L	1	0.05	0.02		GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.75	µg/L	1	0.20	0.04		GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Cobalt	0.552	µg/L	1	0.020	0.003		GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Lead	0.14	µg/L	1	0.20	0.05	J1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.00494	mg/L	1	0.00020	0.00005		GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Mercury	65	ng/L	1	5	2		JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Selenium	0.41	µg/L	1	0.50	0.09	J1	GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 222087 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: EQUIPMENT BLANK - BASP
Customer Description: TG-32
Lab Number: 222087-005
Preparation:
Date Collected: 06/27/2022 13:25 EDT
Date Received: 07/01/2022 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Barium	0.06	µg/L	1	0.20	0.05	J1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Boron	0.024	mg/L	1	0.050	0.009	J1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.90	µg/L	1	0.20	0.04		GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Cobalt	0.011	µg/L	1	0.020	0.003	J1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00005	mg/L	1	0.00020	0.00005	U1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4

222087
Job Comments:

Original report issued 8/3/2022. Report reissued with amended matrix spike precision calculations.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222087 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or above method detection limit (MDL).

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh BASP
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 222087

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 Hg	filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn		Sample Specific Notes:
AD-3	6/28/2022	1055	G	GW	5			X		X	X			TG-32 needed
AD-4c	6/28/2022	1021	G	GW	8			X		X	X			
AD-16R	6/27/2022	1245	G	GW	5			X		X	X			
DUPLICATE - BASP	6/28/2022	1400	G	GW	2			X			X			
EQUIPMENT BLANK - BASP	6/27/2022	1225	G	GW	2			X			X			
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	4	1	4	2			

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company: Eagle	Date/Time: 6/29/22 1600	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 7/1/22 10:30AM

AEP WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Welsh Number of Plastic Containers: 17

Opened By MSD Number of Glass Containers: 5

Date/Time 7/1/22 10:30AM Number of Mercury Containers: —

Were all temperatures within 0-6°C? Y / N or (N/A) Initial: _____ on ice / (no ice)

(IR Gun Ser# 210441568, *Expir.5/27/2023*) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min) | Cr^{+6} (pres) (24 hr) | NO_2 or NO_3 (48 hr) | *ortho*-PO_4 (48 hr) | Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A **Initial & Date:** _____

pH paper (circle one): MQuant pH Cat 1.09535.0001 lot HC904495 _____ [OR] Lab rat pH Cat # LRS -4801 Lot X000RWDG21 ____

- Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 222087 Initial & Date & Time : _____

Comments: _____

Logged by MSD _____

Reviewed by MGMC _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Jonathan Barnhill	Jonathan Barnhill	Lab Supervisor	8-2-2022
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 8-2-2022

Laboratory Job Number: 222087

Prep Batch Number(s): PB22070706 PB22070706 QC2207151 QC2207182

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 8-2-2022

Laboratory Job Number: 222087

Prep Batch Number(s): PB22070706 PB22070706 QC2207151 QC2207182

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 8-2-2022

Laboratory Job Number: 222087

Prep Batch Number(s): PB22070706 PB22070706 QC2207151 QC2207182

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Susann Sulzmann	S. Sulzmann	Chemist	9-21-22
Name (printed)	Signature	Official Title	Date

Mercury Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power

Reviewer Name: Susann Sulzmann

LRC Date: 7-21-22

Laboratory Job Number: 722087

Prep Batch Number(s): PB22070807

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	YES	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	YES	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?		
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power

Reviewer Name: Susann Sultmann

LRC Date: 7-21-22

Laboratory Job Number: 222087

Prep Batch Number(s): PB220708O7

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222846 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: AD-4c
Customer Description: TG-32
Lab Number: 222846-001
Preparation:
Date Collected: 08/26/2022 11:10 EDT
Date Received: 09/01/2022 10:30 EDT

Ion Chromatography

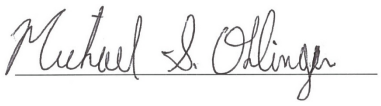
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Sulfate	160	mg/L	5	1.0	0.2		CRJ	09/01/2022 16:54	EPA 300.1 -1997, Rev. 1.0

222846
Job Comments:

Original report issued 9/7/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh BASP
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton

Analysis Turnaround Time (In Calendar Days)
Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 222846

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca	500 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	500 mL bottle, Cool, 0-6°C Sulfate	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	40 mL Glass vial or 250 mL PTFE lined bottle, HCL**, pH<2 Hg	filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn		Sample Specific Notes:
AD-4C	8/26/2022	1010	G	GW	1				X					TG-32 needed
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by: Matt Hamilton	Company: Eagle	Date/Time: 8/31/22 16:00	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Michael Ohlinger	Date/Time: 9/1/22 10:30 AM

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Welsh **Number of Plastic Containers:** 1

Opened By MGK **Number of Glass Containers:** -

Date/Time 9/1/22 10:30 AM **Number of Mercury Containers:** -

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** MGK on (ice) / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: — If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGK 9/1/22 ✓

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495____ [OR] Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 222846 Initial & Date & Time : _____

Logged by MSD Comments: _____

Reviewed by MGK

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

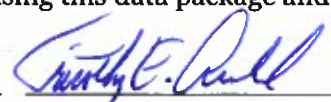
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Timothy E Arnold		Chemist Prin.	09/06/2022
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 09/06/2022

Laboratory Job Number: 222846

Prep Batch Number(s): QC2209015

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 09/06/2022

Laboratory Job Number: 222846

Prep Batch Number(s): QC2209015

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

APPENDIX 6

2H 2022 analytical reports.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223481 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: AD-1 Customer Description: TG-32
Lab Number: 223481-001 Preparation:
Date Collected: 11/01/2022 11:58 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.70	mg/L	2	0.04	0.02		CRJ	11/15/2022 20:47	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14	mg/L	2	0.06	0.02		CRJ	11/15/2022 20:47	EPA 300.1 -1997, Rev. 1.0
Sulfate	61.3	mg/L	2	0.40	0.06		CRJ	11/15/2022 20:47	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	170	mg/L	1	50	20		SDW	11/04/2022 12:35	SM 2540C-2015

Customer Sample ID: AD-5 Customer Description: TG-32
Lab Number: 223481-002 Preparation:
Date Collected: 11/01/2022 09:56 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	16.9	mg/L	2	0.04	0.02		CRJ	11/16/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.16	mg/L	2	0.06	0.02		CRJ	11/16/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	185	mg/L	10	2.0	0.3		CRJ	11/15/2022 21:53	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	380	mg/L	1	50	20		SDW	11/04/2022 12:35	SM 2540C-2015

Customer Sample ID: AD-17 Customer Description: TG-32
Lab Number: 223481-003 Preparation:
Date Collected: 11/01/2022 13:25 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	40.3	mg/L	5	0.10	0.05		CRJ	11/16/2022 02:16	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.09	mg/L	5	0.15	0.05	J1	CRJ	11/16/2022 02:16	EPA 300.1 -1997, Rev. 1.0
Sulfate	1110	mg/L	50	10	2		CRJ	11/15/2022 22:26	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	1690	mg/L	1	50	20		SDW	11/04/2022 12:40	SM 2540C-2015

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223481 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: DUPLICATE - BAP
Customer Description: TG-32
Lab Number: 223481-004
Preparation:
Date Collected: 11/01/2022 15:00 EDT
Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.91	mg/L	2	0.04	0.02		CRJ	11/15/2022 12:33	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14	mg/L	2	0.06	0.02		CRJ	11/15/2022 12:33	EPA 300.1 -1997, Rev. 1.0
Sulfate	60.7	mg/L	2	0.40	0.06		CRJ	11/15/2022 12:33	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

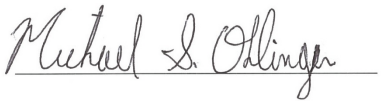
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	170	mg/L	1	50	20		SDW	11/04/2022 12:40	SM 2540C-2015

223481
Job Comments:

Original report issued 11/18/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 223481 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh Background
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (In Calendar Days)
Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 223481

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	40 mL Glass vial or 125 mL PTFE lined bottle, HCL**, pH<2 Hg			Sample Specific Notes:
AD-1	11/1/2022	1058	G	GW	1				X					TG-32 needed
AD-5	11/1/2022	856	G	GW	1				X					
AD-17	11/1/2022	1225	G	GW	1				X					
DUPLICATE - BACKGROUND	11/1/2022	1400	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by: Matt Hamilton	Company: Eagle	Date/Time: 11-2-22 16a	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Michael Ohlinger	Date/Time: 11/3/22 10:30AM

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FedEX USPS
	Other _____

Plant/Customer Welsh BASP Number of Plastic Containers: 4

Opened By Michael Number of Glass Containers: _____

Date/Time 11/03/22 10:30 Number of Mercury Containers: _____

Were all temperatures within 0-6°C? Y / N or N/A Initial: MGC on ice / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? Y / N Comments _____

Was Chain of Custody received? Y / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? Y / N Comments _____

Were samples labeled properly? Y / N Comments _____

Were correct containers used? Y / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A **Initial & Date:** MGC 11/03/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495____ [OR] Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 923481 Initial & Date & Time : _____

Comments: _____

Logged by MSO

Reviewed by JAB

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
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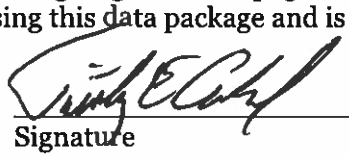
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Timothy E Arnold		Chemist Prin	11/17/2022
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211157

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211157

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

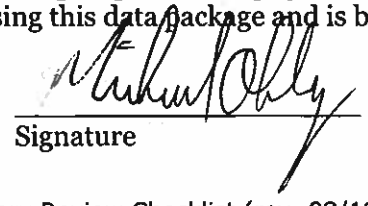
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger		Chemist	11/18/21
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 11/18/22

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211076

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

TDS Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211076

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223510 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: AD-1
Customer Description: TG-32
Lab Number: 223510-001
Preparation:
Date Collected: 11/01/2022 11:58 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03	µg/L	1	0.10	0.02	J1	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Arsenic	0.19	µg/L	1	0.10	0.03		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Barium	78.9	µg/L	1	0.20	0.05		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Beryllium	0.620	µg/L	1	0.050	0.007		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Boron	0.586	mg/L	1	0.050	0.009		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Cadmium	0.024	µg/L	1	0.020	0.004		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Calcium	7.87	mg/L	1	0.05	0.02		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Chromium	0.35	µg/L	1	0.20	0.04		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Cobalt	1.17	µg/L	1	0.020	0.003		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Lead	0.13	µg/L	1	0.20	0.05	J1	GES	12/01/2022 15:24	EPA 200.8-1994, Rev. 5.4
Lithium	0.00818	mg/L	1	0.00020	0.00005		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	1	5	2	J1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Selenium	5.51	µg/L	1	0.50	0.09		GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.06	pCi/L	0.29	0.50	P1	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	87.5	%						
Radium-228	0.95	pCi/L	0.14	0.42		TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	87.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223510 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: AD-5
Customer Description: TG-32
Lab Number: 223510-002
Preparation:
Date Collected: 11/01/2022 09:56 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Arsenic	2.77	µg/L	1	0.10	0.03		GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Barium	63.2	µg/L	1	0.20	0.05		GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Beryllium	0.046	µg/L	1	0.050	0.007	J1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Boron	0.041	mg/L	1	0.050	0.009	J1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Calcium	38.6	mg/L	1	0.05	0.02		GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Chromium	0.43	µg/L	1	0.20	0.04		GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Cobalt	15.1	µg/L	1	0.020	0.003		GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	12/01/2022 15:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.174	mg/L	1	0.00020	0.00005		GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.90	pCi/L	0.38	0.55		ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.6	%						
Radium-228	1.98	pCi/L	0.18	0.52		TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	81.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223510 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: AD-17
Customer Description: TG-32
Lab Number: 223510-003
Preparation:
Date Collected: 11/01/2022 13:25 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02	µg/L	1	0.10	0.02	J1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Arsenic	0.62	µg/L	1	0.10	0.03		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Barium	12.7	µg/L	1	0.20	0.05		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Beryllium	0.073	µg/L	1	0.050	0.007		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Boron	0.097	mg/L	1	0.050	0.009		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019	µg/L	1	0.020	0.004	J1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Calcium	165	mg/L	1	0.05	0.02		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.96	µg/L	1	0.20	0.04		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Cobalt	41.9	µg/L	1	0.020	0.003		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Lead	0.27	µg/L	1	0.20	0.05		GES	12/01/2022 15:44	EPA 200.8-1994, Rev. 5.4
Lithium	0.278	mg/L	1	0.00020	0.00005		GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Mercury	4	ng/L	1	5	2	J1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.42	pCi/L	0.41	0.52		ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.8	%						
Radium-228	1.39	pCi/L	0.14	0.42		TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.4	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223510 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: Dup Background
Customer Description: TG-32
Lab Number: 223510-004
Preparation:
Date Collected: 11/01/2022 15:00 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03	µg/L	1	0.10	0.02	J1	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Arsenic	0.19	µg/L	1	0.10	0.03		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Barium	77.1	µg/L	1	0.20	0.05		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Beryllium	0.593	µg/L	1	0.050	0.007		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Boron	0.568	mg/L	1	0.050	0.009		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Cadmium	0.026	µg/L	1	0.020	0.004		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Calcium	7.61	mg/L	1	0.05	0.02		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Chromium	0.53	µg/L	1	0.20	0.04		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Cobalt	1.17	µg/L	1	0.020	0.003		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Lead	0.13	µg/L	1	0.20	0.05	J1	GES	12/01/2022 16:41	EPA 200.8-1994, Rev. 5.4
Lithium	0.00781	mg/L	1	0.00020	0.00005		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	1	5	2	J1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Selenium	5.31	µg/L	1	0.50	0.09		GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223510 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: EB- Background
Customer Description: TG-32
Lab Number: 223510-005
Preparation:
Date Collected: 11/01/2022 11:37 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Barium	0.06	µg/L	1	0.20	0.05	J1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Boron	0.010	mg/L	1	0.050	0.009	J1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Chromium	0.52	µg/L	1	0.20	0.04		GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Cobalt	0.161	µg/L	1	0.020	0.003		GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Lithium	0.00006	mg/L	1	0.00020	0.00005	J1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.8	µg/L	1	0.5	0.1		GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4

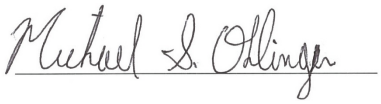
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223510 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

U1 - Not detected at or above method detection limit (MDL).

P1 - The precision between duplicate results was above acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh Background
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (In Calendar Days): Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 22351~~0~~ 10

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3: dissolved Fe and Mn	1 L bottle, Cool, 0-6°C: TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3: Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2: Hg			Sample Specific Notes
AD-1	11/1/2022	1058	G	GW	8		X			X	X			Routine (28 days)
AD-5	11/1/2022	856	G	GW	5		X			X	X			TG-32 needed
AD-17	11/1/2022	1225	G	GW	5		X			X	X			
DUPLICATE - BACKGROUND	11/1/2022	1400	G	GW	2		X				X			
EQUIPMENT BLANK - BACKGROUND	11/1/2022	1037	G	GW	2		X				X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4	2			

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by: [signature]	Company: Eagle	Date/Time: 11-2-22 16a	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 11/4/22 1:30PM

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Welsh **Number of Plastic Containers:** 17

Opened By MGK **Number of Glass Containers:** _____

Date/Time 11/4/22 1:30pm **Number of Mercury Containers:** 5

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** JAB/MGK 11/4/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 (OR) Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223510 Initial & Date & Time : _____

Comments: _____

Logged by MSD _____

Reviewed by JAB _____

_____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Jonathan Barnhill	Jonathan Barnhill	Lab Supervisor	12/13/2022
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 12/13/2022

Laboratory Job Number: 223510

Prep Batch Number(s): PB22111712 PB22112101 PB22112902 QC2211221 QC2211222 QC2212034

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?		
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 12/13/2022

Laboratory Job Number: 223510

Prep Batch Number(s): PB22111712 PB22112101 PB22112902 QC2211221 QC2211222 QC2212034

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 12/13/2022

Laboratory Job Number: 223510

Prep Batch Number(s): PB22111712 PB22112101 PB22112902 QC2211221 QC2211222 QC2212034

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223477 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: AD-3 Customer Description: TG-32
Lab Number: 223477-001 Preparation:
Date Collected: 11/01/2022 11:23 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8.04	mg/L	2	0.04	0.02		CRJ	11/15/2022 18:02	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14	mg/L	2	0.06	0.02		CRJ	11/15/2022 18:02	EPA 300.1 -1997, Rev. 1.0
Sulfate	13.0	mg/L	2	0.40	0.06		CRJ	11/15/2022 18:02	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	110	mg/L	1	50	20		SDW	11/04/2022 12:22	SM 2540C-2015

Customer Sample ID: AD-4c Customer Description: TG-32
Lab Number: 223477-002 Preparation:
Date Collected: 11/01/2022 10:56 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	19.1	mg/L	2	0.04	0.02		CRJ	11/15/2022 18:35	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.1	mg/L	2	0.06	0.02		CRJ	11/15/2022 18:35	EPA 300.1 -1997, Rev. 1.0
Sulfate	142	mg/L	10	2.0	0.3		CRJ	11/16/2022 08:20	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	370	mg/L	1	50	20		SDW	11/04/2022 12:22	SM 2540C-2015

Customer Sample ID: AD-16R Customer Description: TG-32
Lab Number: 223477-003 Preparation:
Date Collected: 11/01/2022 10:19 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	7.96	mg/L	2	0.04	0.02		CRJ	11/15/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.10	mg/L	2	0.06	0.02		CRJ	11/15/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Sulfate	48.1	mg/L	2	0.40	0.06		CRJ	11/15/2022 19:41	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	150	mg/L	1	50	20		SDW	11/04/2022 12:28	SM 2540C-2015

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 223477 **Customer: Welsh Power Station** **Date Reported: 12/30/2022**

Customer Sample ID: DUPLICATE - BASP
Customer Description: TG-32
Lab Number: 223477-004
Preparation:
Date Collected: 11/01/2022 11:45 EDT
Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8.01	mg/L	2	0.04	0.02		CRJ	11/15/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14	mg/L	2	0.06	0.02		CRJ	11/15/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Sulfate	12.8	mg/L	2	0.40	0.06		CRJ	11/15/2022 20:14	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

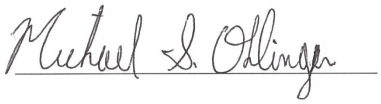
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	120	mg/L	1	50	20		SDW	11/04/2022 12:28	SM 2540C-2015

223477
Job Comments:

Original report issued 11/18/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh BASP
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816

Sampler(s): Matt Hamilton Kenny McDonald

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 223477

Analysis Turnaround Time (in Calendar Days)
Routine (28 days)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca	500 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	40 mL Glass vial or 250 mL PTFE lined bottle, HCL**, pH<2 Hg	filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn		Sample Specific Notes:
AD-3	11/1/2022	1023	G	GW	1				X					TG-32 needed
AD-4c	11/1/2022	956	G	GW	1				X					
AD-16R	11/1/2022	919	G	GW	1				X					
DUPLICATE - BASP	11/1/2022	1045	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company: Eagle	Date/Time: 11-2-22 1600	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 11/3/22 10:30AM

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS FedEX USPS
	Other _____

Plant/Customer Welsh BASP **Number of Plastic Containers:** 4

Opened By Michael **Number of Glass Containers:** _____

Date/Time 11/03/22 10:30 **Number of Mercury Containers:** _____

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** MGC (on ice) / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days **If RUSH, who was notified?** _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGC 11/03/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495____ [OR] Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223477 Initial & Date & Time : _____

Logged by MSO Comments: _____

Reviewed by JAB _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

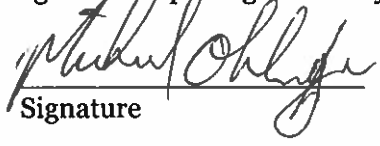
Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Michael Ohlinger		Chemist	11/18/22
Name (printed)	Signature	Official Title	Date

TDS Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 11/18/22

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211076

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

TDS Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211076

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

TDS Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [x] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

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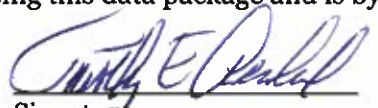
Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Timothy E Arnold		Chemist Prin	11/17/2022
Name (printed)	Signature	Official Title	Date

Ion Chromatography Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211157

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211157

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223509 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: AD-3 Customer Description: TG-32
Lab Number: 223509-001 Preparation:
Date Collected: 11/01/2022 11:23 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Arsenic	0.20	µg/L	1	0.10	0.03		GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Barium	45.8	µg/L	1	0.20	0.05		GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Beryllium	0.244	µg/L	1	0.050	0.007		GES	12/01/2022 14:48	EPA 200.8-1994, Rev. 5.4
Boron	<0.009	mg/L	1	0.050	0.009	U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Cadmium	0.038	µg/L	1	0.020	0.004		GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Calcium	1.57	mg/L	1	0.05	0.02		GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Chromium	0.48	µg/L	1	0.20	0.04		GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Cobalt	1.40	µg/L	1	0.020	0.003		GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Lead	0.23	µg/L	1	0.20	0.05		GES	12/01/2022 14:48	EPA 200.8-1994, Rev. 5.4
Lithium	0.0173	mg/L	1	0.00020	0.00005	M1	GES	12/01/2022 14:48	EPA 200.8-1994, Rev. 5.4
Mercury	100	ng/L	10	50	20		JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Selenium	0.16	µg/L	1	0.50	0.09	J1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.18	pCi/L	0.28	0.41		ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.4	%						
Radium-228	0.62	pCi/L	0.13	0.42		TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	95.2	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223509 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: AD-4c
Customer Description: TG-32
Lab Number: 223509-002
Preparation:
Date Collected: 11/01/2022 10:56 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02	µg/L	1	0.10	0.02	J1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.95	µg/L	1	0.10	0.03		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Barium	66.5	µg/L	1	0.20	0.05		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.27	µg/L	5	0.25	0.04		GES	12/05/2022 08:52	EPA 200.8-1994, Rev. 5.4
Boron	0.068	mg/L	1	0.050	0.009		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.204	µg/L	1	0.020	0.004		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Calcium	1.42	mg/L	1	0.05	0.02		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Chromium	1.03	µg/L	1	0.20	0.04		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Cobalt	0.757	µg/L	1	0.020	0.003		GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Lead	0.25	µg/L	1	0.20	0.05		GES	12/01/2022 14:53	EPA 200.8-1994, Rev. 5.4
Lithium	0.0085	mg/L	5	0.0010	0.0003		GES	12/05/2022 08:52	EPA 200.8-1994, Rev. 5.4
Mercury	120	ng/L	10	50	20		JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Selenium	0.37	µg/L	1	0.50	0.09	J1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.06	µg/L	1	0.20	0.04	J1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.60	pCi/L	0.35	0.61		ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	98.0	%						
Radium-228	0.51	pCi/L	0.15	0.48		TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.3	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223509 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: AD-16R
Customer Description: TG-32
Lab Number: 223509-003
Preparation:
Date Collected: 11/01/2022 10:19 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.04	µg/L	1	0.10	0.02	J1	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Arsenic	0.67	µg/L	1	0.10	0.03		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Barium	48.8	µg/L	1	0.20	0.05		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Beryllium	1.03	µg/L	5	0.25	0.04		GES	12/05/2022 09:08	EPA 200.8-1994, Rev. 5.4
Boron	0.019	mg/L	1	0.050	0.009	J1	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Cadmium	0.737	µg/L	1	0.020	0.004		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Calcium	0.32	mg/L	1	0.05	0.02		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.92	µg/L	1	0.20	0.04		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Cobalt	27.2	µg/L	1	0.020	0.003		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Lead	0.34	µg/L	1	0.20	0.05		GES	12/01/2022 15:08	EPA 200.8-1994, Rev. 5.4
Lithium	0.0179	mg/L	5	0.0010	0.0003		GES	12/05/2022 09:08	EPA 200.8-1994, Rev. 5.4
Mercury	58	ng/L	1	5	2		JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Selenium	0.74	µg/L	1	0.50	0.09		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Thallium	0.53	µg/L	1	0.20	0.04		GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	4.65	pCi/L	0.58	0.52		ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	90.4	%						
Radium-228	2.92	pCi/L	0.15	0.38		TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.1	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 223509 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: DUPLICATE - BASP
Customer Description: TG-32
Lab Number: 223509-004
Preparation:
Date Collected: 11/01/2022 11:45 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Arsenic	0.23	µg/L	1	0.10	0.03		GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Barium	48.9	µg/L	1	0.20	0.05		GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Beryllium	0.27	µg/L	5	0.25	0.04		GES	12/05/2022 09:13	EPA 200.8-1994, Rev. 5.4
Boron	0.01	mg/L	1	0.050	0.009	J1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Cadmium	0.042	µg/L	1	0.020	0.004		GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Calcium	1.70	mg/L	1	0.05	0.02		GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Chromium	0.55	µg/L	1	0.20	0.04		GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Cobalt	1.51	µg/L	1	0.020	0.003		GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Lead	0.20	µg/L	1	0.20	0.05		GES	12/01/2022 15:13	EPA 200.8-1994, Rev. 5.4
Lithium	0.0196	mg/L	5	0.0010	0.0003		GES	12/05/2022 09:13	EPA 200.8-1994, Rev. 5.4
Mercury	101	ng/L	1	5	2		JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Selenium	0.18	µg/L	1	0.50	0.09	J1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223509 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Customer Sample ID: EQUIPMENT BLANK - BASP
Customer Description: TG-32
Lab Number: 223509-005
Preparation:
Date Collected: 11/01/2022 10:49 EDT
Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	12/01/2022 15:19	EPA 200.8-1994, Rev. 5.4
Boron	<0.009	mg/L	1	0.050	0.009	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Chromium	0.53	µg/L	1	0.20	0.04		GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Cobalt	0.145	µg/L	1	0.020	0.003		GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	12/01/2022 15:19	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00005	mg/L	1	0.00020	0.00005	U1	GES	12/01/2022 15:19	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.2	µg/L	1	0.5	0.1	J1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4

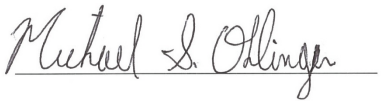
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223509 **Customer: Welsh Power Station** **Date Reported: 12/20/2022**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

U1 - Not detected at or above method detection limit (MDL).
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125

Contacts: Michael Ohlinger (614-836-4184)

Project Name: Welsh BASP
Contact Name: Jill Parker-Witt
Contact Phone: (318) 673-3816
Sampler(s): Matt Hamilton Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
Routine (28 days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 223509

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass bottle, HCL**, pH<2 Hg	filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn		Sample Specific Notes
AD-3	11/1/2022	1023	G	GW	8			X		X	X			TG-32 needed
AD-4c	11/1/2022	956	G	GW	5			X		X	X			
AD-16R	11/1/2022	919	G	GW	5			X		X	X			
DUPLICATE - BASP	11/1/2022	1045	G	GW	2			X			X			
EQUIPMENT BLANK - BASP	11/1/2022	949	G	GW	2			X			X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	4	1	4	2			

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Matt Hamilton	Eagle	11-2-22 16:00		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Michael Ohlinger	11/4/22 1:30pm

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Welsh **Number of Plastic Containers:** 17

Opened By MGK **Number of Glass Containers:** _____

Date/Time 11/4/22 1:30pm **Number of Mercury Containers:** 5

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGK|JAB 11/4/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 (OR) Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Initial & Date & Time : _____

Lab ID# 223509

Comments: _____

Logged by JMSO _____

_____

Reviewed by JAB _____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

- [x] This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.
- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Susann Sulzmann	S Sulzmann	Senior Chemist	11-16-2022
Name (printed)	Signature	Official Title	Date

Mercury Laboratory Review Checklist

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power Station

Reviewer Name: Susann Sulzmann

LRC Date: 11-16-2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22110704

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?	yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Mercury Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power Station

Reviewer Name: Susann Sulzmann

LRC Date: 11-16-2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22110704

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Mercury Laboratory Review Checklist

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power Station

Reviewer Name: Susann Sulzmann

LRC Date: 11-16-2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22110704

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB<MQL.

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

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- [x] R1 Field chain-of-custody documentation
- [x] R2 Sample identification cross-reference
- [x] R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
  - (b) Dilution factors
  - (c) Preparation methods
  - (d) Cleanup methods
  - (e) If required for the project, tentatively identified compounds (TICs)
- [NA] R4 Surrogate recovery data including:
  - (a) Calculated recovery (%R)
  - (b) The laboratory's surrogate QC limits
- [x] R5 Test reports/summary forms for blank samples
- [x] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - (a) LCS spiking amounts
  - (b) Calculated %R for each analyte
  - (c) The laboratory's LCS QC limits
- [x] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - (a) Samples associated with the MS/MSD clearly identified
  - (b) MS/MSD spiking amounts
  - (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
  - (d) Calculated %Rs and relative percent differences (RPDs)
  - (e) The laboratory's MS/MSD QC limits
- [x] R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - (a) The amount of analyte measured in the duplicate
  - (b) The calculated RPD
  - (c) The laboratory's QC limits for analytical duplicates
- [x] R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix
- [x] R10 Other problems or anomalies
- [x] The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: (●) This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Jonathan Barnhill	Jonathan Barnhill	Lab Supervisor	12/13/2022
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 12/13/2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22111712, PB22112902, QC2211221, QC2212034, QC2212036

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	**Sample and quality control (QC) identification**		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	**Test reports**		
	I	Were all samples prepared and analyzed within holding times?		
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	O	**Surrogate recovery data**		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	**Test reports/summary forms for blank samples**		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	**Laboratory control samples (LCS):**		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	No	ER3
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	**Analytical duplicate data**		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	**Method quantitation limits (MQLs):**		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	**Other problems/anomalies**		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 12/13/2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22111712, PB22112902, QC2211221, QC2212034, QC2212036

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	O	**Mass spectral tuning:**		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	O	**Internal standards (IS):**		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	O	**Tentatively identified compounds (TICs):**		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	**Interference Check Sample (ICS) results:**		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	**Method detection limit (MDL) studies**		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	**Proficiency test reports:**		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	**Standards documentation**		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	**Compound/analyte identification procedures**		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	**Demonstration of analyst competency (DOC)**		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name:

Reviewer Name: Jonathan Barnhill

LRC Date: 12/13/2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22111712, PB22112902, QC2211221, QC2212034, QC2212036

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.
ER3	Matrix Spike failure for Li on sample 223509-001

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."