Annual Groundwater Monitoring Report

Southwestern Electric Power Company

John W. Turk Power Plant

Landfill CCR Unit

Fulton, Arkansas

January 31, 2026

Prepared by:
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, Ohio 43215

SOUTHWESTERN ELECTRIC POWER COMPANY℠

An AEP Company

BOUNDLESS ENERGY℠

Table of Contents

Abbreviations:
ASD - Alternate Source Demonstration
CCR – Coal Combustion Residual
GWPS - Groundwater protection standards
SSI - Statistically Significant Increase
SSL - Statistically Significant Level

I. Overview

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year at the Landfill (LF) Coal Combustion Residual (CCR) unit at Turk Power Plant. The Southwestern Electric Power Company is wholly-owned subsidiary of American Electric Power Company (AEP). The USEPA's CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31, 2026.

In general, the following activities were completed:

- At the start of the current annual reporting period, the LF was operating under the Detection monitoring program.
- At the end of the current annual reporting period, the LF was operating under the Detection monitoring program.
- Groundwater samples were collected and analyzed for Appendix III constituents, as specified in 40 CFR 257.94 *et seq.* and AEP's *Groundwater Sampling and Analysis Plan (2021)*.
- Groundwater data underwent various validation tests, including tests for completeness, valid values, transcription errors, and consistent units.
- Data not available for the previous reporting period indicated that during the 2nd semi-annual 2024 sampling event (November 2024 and January 2025):
    - No SSIs were determined
- During the 1st semi-annual 2025 sampling event (June 2025) with confirmation sampling conducted in September 2025:
    - The following Appendix III parameters exceeded background concentrations for:
        - Chloride at MW-3
- The 2nd semi-annual 2025 sampling event (November 2025) data are still undergoing statistical analysis.
- ASD for the 1st semi-annual sampling event (June 2025) is still undergoing analysis.
- A statistical process in accordance with 40 CFR 257.93 to evaluate groundwater data was updated, certified, and posted to AEP's CCR website in 2021 titled: AEP's *Statistical Analysis Plan (*Geosyntec 2021). The statistical process was guided by USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* ("Unified Guidance," USEPA, 2009).

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

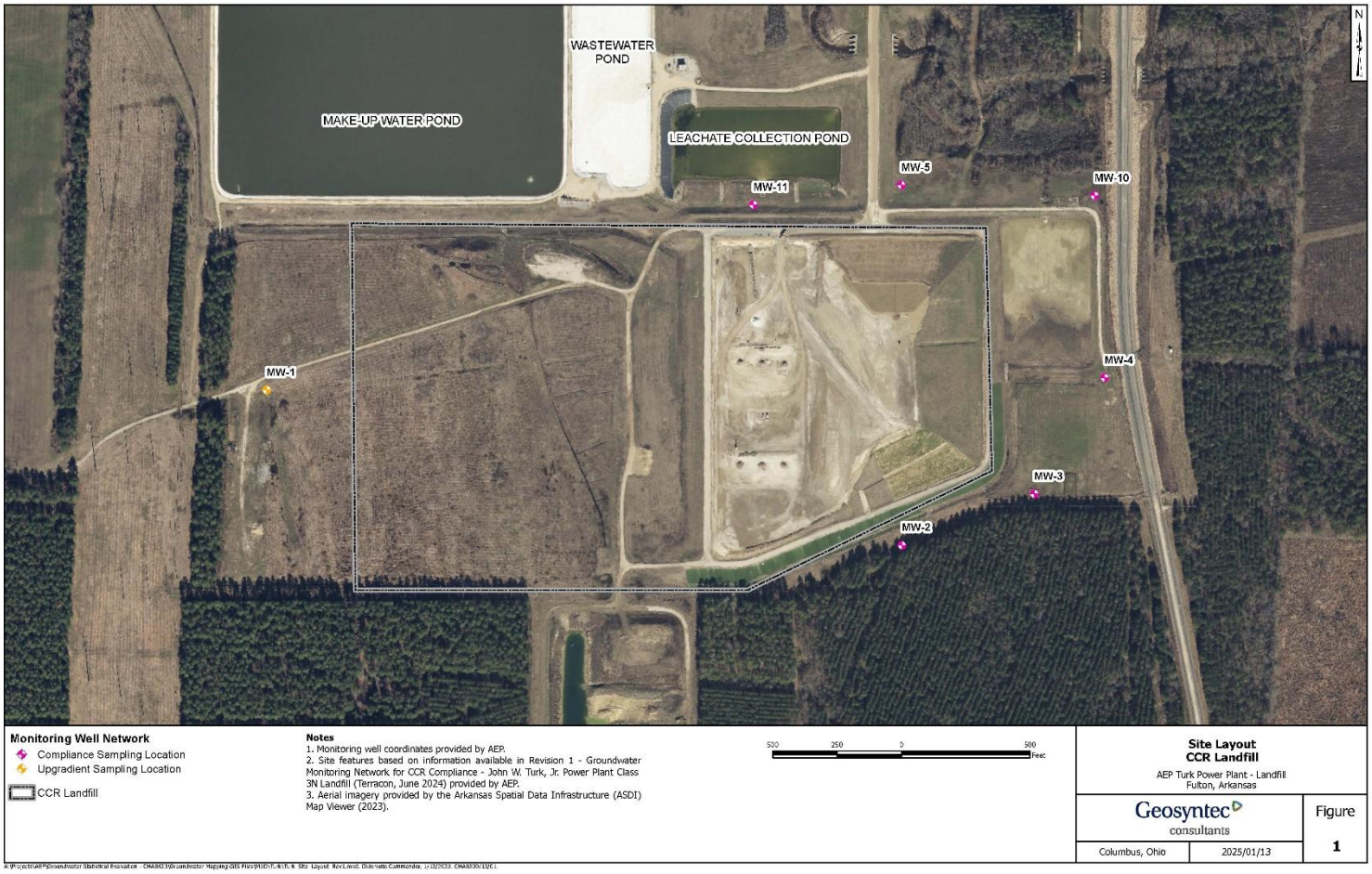
- A map, aerial photograph or a drawing showing the LF, all groundwater monitoring wells and monitoring well identification numbers;
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of detection monitoring or assessment monitoring programs (attached as **Appendix 1**);
- Statistical comparison of monitoring data to determine if there have been SSI(s) (Attached as **Appendix 2**);
- A discussion of whether any alternate source demonstrations were performed, and the conclusions (where applicable, attached as **Appendix 3**);
- 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, if applicable (attached as **Appendix 4**);
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement as to why that happened, if applicable (attached as **Appendix 5**);
- Other information required to be included in the annual report such as assessment of corrective measures, if applicable.

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, the monitoring well locations and their corresponding identification numbers.

Landfill Monitoring Wells	
Up Gradient	Down Gradient
MW-1	MW-2
	MW-3
	MW-4
	MW-5
	MW-10
	MW-11



III. Monitoring Wells Installed or Decommissioned

There were no new groundwater monitoring wells installed or decommissioned during 2025. The current network design was updated in 2024 in the *Groundwater Monitoring Network Design Report* (June 2024) and is posted at the CCR website for Turk Power Plant's LF. That network design report, viewable on the AEP CCR web site, discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

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

Appendix 1 contains the groundwater velocity, groundwater flow direction, potentiometric maps developed after each sampling event and the groundwater quality data collected during this time period.

- 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.

As required by the detection monitoring rules, 40 CFR 257.94, two rounds of sampling were conducted in June and November 2025 including all Appendix III parameters.

- Data and statistical analysis not available for the previous reporting period indicated that during the 2nd semi-annual 2024 sampling event (November 2024) with confirmation sampling conducted in January 2025:
  - No SSIs were determined.
- During the 1st semi-annual 2025 sampling event (June and September 2025):
  - An SSI was determined for Chloride at MW-3.
- The 2nd semi-annual 2025 sampling event (November 2025) data are still undergoing statistical analysis.

VI. Alternate Source Demonstration

No alternate source demonstrations (ASDs) have been completed at this time. If a successful ASD cannot be prepared, the unit will move to assessment monitoring by notifying the EPA within 90 days of the statistical analysis certification.

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

No transition was made during the reporting period and the CCR Unit remained in detection monitoring.

Detection monitoring will continue in 2026.

Regarding defining an alternate monitoring frequency, the groundwater velocity and monitoring well production are high enough at this facility that no modification to the semiannual assessment monitoring frequency is needed.

VIII. Other Information Required

The background data was re-established in October 2024.

IX. Description of Any Problems Encountered in 2025 and Actions Taken

No significant problems were encountered. The low flow sampling effort went smoothly, and the schedule was met to support the annual groundwater report preparation covering the year 2025 groundwater monitoring activities.

X. A Projection of Key Activities for the Upcoming Year

Key activities for the next year include:

- Complete statistical evaluation of the second semi-annual groundwater monitoring event that took place in November 2025.
- Complete ASD for the potential SSI from the 1st semi-annual 2025 sampling event or move to assessment monitoring by notifying the EPA within 90 days of the statistical analysis certification if a successful ASD cannot be prepared.
- Complete additional ASDs for potential SSIs, as needed.
- Detection monitoring on a twice per year schedule for all constituents listed in Appendix III as required by 40 CFR 257.94.
- Perform statistical analysis on the sampling results for the Appendix III parameters as required by 40 CFR 257.94.
- Evaluation of the detection monitoring results from a statistical analysis viewpoint, looking for any SSIs above background.
- Install additional groundwater monitoring wells in anticipation of the planned lateral expansion of the CCR landfill and update the Sampling and Analysis Plan accordingly.
- Responding to any new data received in light of CCR rule requirements.
- Preparation of the next annual groundwater report.

APPENDIX 1- Groundwater Data Tables and Figures

Figures and Tables follow, showing 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.

Table 1. Groundwater Data Summary: MW-1
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.247	218	284	1.1734	7.0	478	1752
7/25/2016	Background	0.274	247	294	0.7506 J1	6.5	767	2245
9/01/2016	Background	0.258	251	271	1.0888	6.5	469	1742
11/02/2016	Background	0.321	275	360	0.5629 J1	6.6	1479	3008
12/15/2016	Background	0.333	310	350	2	6.7	830	2328
2/01/2017	Background	0.212	230	331	2	7.0	461	1812
2/21/2017	Background	0.184	215	281	1.1213	7.0	407	1660
5/02/2017	Background	0.137	176	230	1.23	7.4	334	1020
6/29/2017	Background	0.135	177	202	1.1529	7.4	301	1374
7/19/2017	Background	0.17	183	226	1.1435	6.7	407	1504
8/10/2017	Detection	0.181	207	243	0.9589 J1	7.0	417	1600
4/26/2018	Detection	0.126	153	166	1.657	7.3	294	1220
9/05/2018	Detection	0.098	198	216	< 0.083 U1	7.1	280	1216
4/17/2019	Detection	0.120	160	197	1.51	7.5	317	1188
9/19/2019	Detection	0.242	244	239	1.03	7.4	463	1462
5/27/2020	Detection	0.109	157	172	1.37	8.1	269	1120
11/09/2020	Detection	0.086	156	186	1.52	8.1	274	1160
12/27/2020	Detection	--	--	--	--	7.3	--	--
6/29/2021	Detection	0.084	141	166	1.45	7.0	264	1140
11/29/2021	Detection	0.25	289 M1, P3	227	1.07	7.0	774	1970
6/07/2022	Detection	0.159	180	171	1.36	7.3	353	1240
11/28/2022	Detection	0.396	287 M1	264	1.17	7.2	718	1830
6/14/2023	Detection	0.084	155	169	1.43	7.2	264	1100
11/29/2023	Detection	0.082	154	180	1.42	7.0	270	1110
6/25/2024	Detection	0.079	151	172	1.43	6.8	279	1080
11/19/2024	Detection	0.102	170	172	1.58	7.3	278	1080
6/26/2025	Detection	0.09 J1	158 M1	156	1.55	6.7	258	1090
11/18/2025	Detection	0.13 J1	171	166	1.56	7.0	265	1150

Table 1. Groundwater Data Summary: MW-1
Turk - LF
Appendix IV Constituents

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
6/01/2016	Background	< 0.93 U1	< 1.05 U1	38	0.0809225 J1	< 0.07 U1	1	1.08847 J1	--	1.1734	1.15566 J1	0.099	0.01991 J1	2.54209 J1	2.09098 J1	1.23972 J1
7/25/2016	Background	< 0.93 U1	< 1.05 U1	49	0.159579 J1	< 0.07 U1	1	1.25472 J1	--	0.7506 J1	< 0.68 U1	0.118	0.01078 J1	3.09725 J1	3.00699 J1	< 0.86 U1
9/01/2016	Background	1.45614 J1	< 1.05 U1	41	0.16559 J1	0.810967 J1	0.406151 J1	0.950716 J1	1.844	1.0888	< 0.68 U1	0.087	0.01003 J1	4.13353 J1	3.88471 J1	< 0.86 U1
11/02/2016	Background	3.5 J1	< 1.05 U1	42.76	< 0.02 U1	< 0.07 U1	0.9 J1	1.1 J1	1.287	0.5629 J1	< 0.68 U1	0.105	< 0.005 U1	1.57 J1	3.33 J1	< 0.86 U1
12/15/2016	Background	0.950637 J1	< 1.05 U1	39	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.605475 J1	2.076	2	< 0.68 U1	0.102	< 0.005 U1	1.57771 J1	< 0.99 U1	< 0.86 U1
2/01/2017	Background	< 0.93 U1	< 1.05 U1	32	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.688421 J1	1.203	2	< 0.68 U1	0.081	0.01216 J1	1.43338 J1	< 0.99 U1	< 0.86 U1
2/21/2017	Background	< 0.93 U1	< 1.05 U1	31	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.564016 J1	0.899	1.1213	< 0.68 U1	0.078	0.00711 J1	1.7175 J1	2.52261 J1	< 0.86 U1
5/02/2017	Background	< 0.93 U1	< 1.05 U1	29.84	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.57 J1	1.114	1.23	0.74 J1	0.06633	< 0.005 U1	2.15 J1	3.43 J1	< 0.86 U1
6/29/2017	Background	< 0.93 U1	< 1.05 U1	27.71	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.33 J1	4.687	1.1529	< 0.68 U1	0.05943	< 0.005 U1	1.68 J1	< 0.99 U1	< 0.86 U1
7/19/2017	Background	< 0.93 U1	< 1.05 U1	30.71	< 0.02 U1	< 0.07 U1	0.24 J1	0.78 J1	0.842	1.1435	0.71 J1	0.06479	< 0.005 U1	1.82 J1	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-2
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.07	57.4	12	0.5064 J1	7.9	42	343
7/25/2016	Background	0.152	120	10	0.4781 J1	6.9	121	486
9/01/2016	Background	0.128	109	15	0.4811 J1	6.9	108	514
11/02/2016	Background	0.369	398	25	0.493 J1	6.9	346	960
12/15/2016	Background	0.109	95.2	47	0.5233 J1	7.0	79	562
2/01/2017	Background	0.05	38.9	9	0.5086 J1	7.5	28	248
2/21/2017	Background	0.05	40.8	10	< 0.083 U1	7.9	33	252
5/02/2017	Background	0.04823	51.2	5	0.52 J1	7.9	19	208
6/29/2017	Background	0.05514	59.6	7	0.4428 J1	7.9	48	336
7/19/2017	Background	0.08324	65.5	8	0.4694 J1	7.5	44	332
8/10/2017	Detection	0.07471	62.9	10	0.451 J1	7.5	25	304
4/26/2018	Detection	0.04343	51.8	6	< 0.083 U1	7.6	22	264
9/05/2018	Detection	0.098	111	13	< 0.083 U1	7.4	66	348
4/17/2019	Detection	0.037	76.8	5.86	0.34	7.9	18.6	310
9/19/2019	Detection	0.098	113	10.1	0.30	8.0	76.8	416
5/27/2020	Detection	0.051	75.7	6.17	0.28	8.5	17.2	311
7/14/2020	Detection	--	--	--	--	7.9	--	--
11/09/2020	Detection	0.059	89.9	7.55	0.34	8.5	52.9	332
12/22/2020	Detection	--	--	--	--	7.8	--	--
6/29/2021	Detection	0.034 J1	75.1	3.26	0.30	7.4	15.5	320
11/29/2021	Detection	0.045 J1	89.3	13.9	0.29	7.5	40.9	340
6/07/2022	Detection	0.035 J1	67.3	5.26	0.33	7.4	21.8	280
11/28/2022	Detection	0.064	143	52.8	0.26	7.5	161	610
1/19/2023	Detection	--	66.6	--	--	7.5	--	--
6/14/2023	Detection	0.054	75.4	4.73	0.31	7.4	49.1	320
11/29/2023	Detection	0.043 J1	81.2	11.6	0.28	7.3	33.3	340
6/25/2024	Detection	0.031 J1	70.8	5.75	0.31	7.2	21.9	300
11/19/2024	Detection	0.048 J1	92	22.3	0.36	7.7	46.6	360
6/26/2025	Detection	< 0.04 U1	71.3 M1	10.0	0.40	7.0	20.1	300 S7
11/18/2025	Detection	0.713	363	28.0	0.35	7.3	457	1020

Table 1. Groundwater Data Summary: MW-2
Turk - LF
Appendix IV Constituents

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
6/01/2016	Background	< 0.93 U1	1.75982 J1	120	0.122549 J1	< 0.07 U1	2	0.904166 J1	--	0.5064 J1	2.01553 J1	0.015	0.01145 J1	2.82795 J1	1.14538 J1	< 0.86 U1
7/25/2016	Background	< 0.93 U1	1.39254 J1	152	0.131235 J1	< 0.07 U1	0.862157 J1	1.21412 J1	--	0.4781 J1	< 0.68 U1	0.048	0.00701 J1	4.69255 J1	< 0.99 U1	< 0.86 U1
9/01/2016	Background	5	< 1.05 U1	162	0.141798 J1	< 0.07 U1	3	1.1267 J1	3.045	0.4811 J1	1.22736 J1	0.031	0.01382 J1	6	3.91967 J1	< 0.86 U1
11/02/2016	Background	1.91737 J1	< 1.05 U1	107	0.0819 J1	< 0.07 U1	3	1.53886 J1	1.939	0.493 J1	1.26945 J1	0.088	0.00947 J1	5	1.45298 J1	< 0.86 U1
12/15/2016	Background	1.7294 J1	< 1.05 U1	158	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.355698 J1	1.919	0.5233 J1	< 0.68 U1	0.028	< 0.005 U1	2.15202 J1	1.67636 J1	< 0.86 U1
2/01/2017	Background	< 0.93 U1	< 1.05 U1	80	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.217505 J1	0.933	0.5086 J1	< 0.68 U1	0.011	< 0.005 U1	2.91607 J1	< 0.99 U1	< 0.86 U1
2/21/2017	Background	< 0.93 U1	< 1.05 U1	83	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.233088 J1	1.335	< 0.083 U1	< 0.68 U1	0.012	< 0.005 U1	2.62555 J1	< 0.99 U1	< 0.86 U1
5/02/2017	Background	1.46 J1	1.37 J1	93	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.32 J1	1.935	0.52 J1	< 0.68 U1	0.00925	< 0.005 U1	1.08 J1	1.32 J1	< 0.86 U1
6/29/2017	Background	< 0.93 U1	< 1.05 U1	101	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.58 J1	3.373	0.4428 J1	< 0.68 U1	0.01089	< 0.005 U1	0.87 J1	< 0.99 U1	< 0.86 U1
7/19/2017	Background	< 0.93 U1	< 1.05 U1	97.5	0.02 J1	< 0.07 U1	0.76 J1	0.71 J1	2.712	0.4694 J1	1.14 J1	0.01387	0.005 J1	1.18 J1	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-3
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.04	93.9	3	0.3926 J1	7.6	17	357
7/25/2016	Background	0.168	393	37	0.4403 J1	7.4	699	1612
9/01/2016	Background	0.09	149	14	0.4288 J1	7.3	119	564
11/02/2016	Background	0.151	264	48	0.5852 J1	7.4	424	1188
12/15/2016	Background	0.06	67.8	15	0.6047 J1	7.4	43	408
2/01/2017	Background	0.03	53	7	< 0.083 U1	7.4	19	220
2/21/2017	Background	0.05	81.5	12	< 0.083 U1	7.6	76	340
5/02/2017	Background	0.04375	77.3	6	0.37 J1	7.6	27	328
6/29/2017	Background	0.05282	95.6	6	0.3475 J1	7.6	32	332
7/19/2017	Background	0.09178	122	15	< 0.083 U1	7.2	95	510
8/10/2017	Detection	0.09788	160	23	0.438 J1	7.5	190	716
4/26/2018	Detection	0.03713	61.3	4	< 0.083 U1	7.4	28	278
9/05/2018	Detection	0.073	160	58	< 0.083 U1	7.3	554	1234
1/22/2019	Detection	--	--	7.3	--	--	--	--
4/17/2019	Detection	0.035	81.1	3.70	0.21	7.5	13.7	364
9/19/2019	Detection	0.074	143	27.3	0.22	7.9	148	612
5/27/2020	Detection	0.053	82.0	11.3	0.22	8.2	11.7	370
7/14/2020	Detection	--	--	--	--	7.9	--	--
11/09/2020	Detection	0.056	85.6	28.8	0.29	8.1	12.9	402
12/22/2020	Detection	--	--	--	--	7.3	--	--
6/29/2021	Detection	0.067	118	88.8	0.29	7.2	92.0	670
11/29/2021	Detection	0.07 J1	225	263	0.25	7.0	193	1040
6/07/2022	Detection	0.050	122	123	0.30	7.3	100	710
11/28/2022	Detection	0.077	207	265	0.29	7.2	276	1160
1/19/2023	Detection	--	--	--	--	7.2	--	--
6/14/2023	Detection	0.077	144	145	0.32	7.3	187	830
11/29/2023	Detection	0.070	154	174	0.29	7.1	185	900
6/25/2024	Detection	0.063	191	246	0.29	6.9	268	1080
11/19/2024	Detection	0.078	273	329	0.33	7.3	381	1420
1/07/2025	Detection	--	152 M1	207	--	6.7	--	1060
6/26/2025	Detection	0.07 J1	192	306	0.35	7.2	330	1270
9/16/2025	Detection	--	--	426	--	6.9	--	--
11/18/2025	Detection	0.12 J1	340	533	0.32	7.0	560	1960

Table 1. Groundwater Data Summary: MW-3
Turk - LF
Appendix IV Constituents

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
6/01/2016	Background	< 0.93 U1	< 1.05 U1	73	0.194411 J1	< 0.07 U1	1	0.664792 J1	--	0.3926 J1	0.940276 J1	0.01	0.01506 J1	0.949404 J1	< 0.99 U1	< 0.86 U1
7/25/2016	Background	< 0.93 U1	< 1.05 U1	238	0.137503 J1	< 0.07 U1	0.493284 J1	0.785774 J1	--	0.4403 J1	< 0.68 U1	0.075	< 0.005 U1	1.16782 J1	< 0.99 U1	< 0.86 U1
9/01/2016	Background	1.90159 J1	< 1.05 U1	81	0.185901 J1	< 0.07 U1	0.955367 J1	0.803817 J1	3.55	0.4288 J1	< 0.68 U1	0.014	< 0.005 U1	1.14299 J1	1.25976 J1	< 0.86 U1
11/02/2016	Background	1.9135 J1	2.32209 J1	160	0.0958 J1	< 0.07 U1	0.571016 J1	1.33502 J1	2.83	0.5852 J1	1.51713 J1	0.03	< 0.005 U1	1.68622 J1	< 0.99 U1	< 0.86 U1
12/15/2016	Background	1.36647 J1	1.8418 J1	55	0.261831 J1	< 0.07 U1	0.471105 J1	0.395502 J1	1.920	0.6047 J1	< 0.68 U1	0.009	< 0.005 U1	0.30882 J1	< 0.99 U1	< 0.86 U1
2/01/2017	Background	1.38687 J1	< 1.05 U1	55	0.157528 J1	< 0.07 U1	0.906786 J1	0.761635 J1	0.942	< 0.083 U1	< 0.68 U1	0.003	0.00701 J1	1.02923 J1	< 0.99 U1	< 0.86 U1
2/21/2017	Background	1.75888 J1	< 1.05 U1	66	0.239409 J1	< 0.07 U1	4	1.21066 J1	1.156	< 0.083 U1	2.18988 J1	0.008	0.00692 J1	0.551231 J1	< 0.99 U1	0.918887 J1
5/02/2017	Background	< 0.93 U1	2.37 J1	47.28	0.1 J1	< 0.07 U1	0.31 J1	0.35 J1	2.80	0.37 J1	< 0.68 U1	0.00679	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/29/2017	Background	< 0.93 U1	< 1.05 U1	63.01	0.13 J1	< 0.07 U1	1.64	0.89 J1	1.894	0.3475 J1	1.12 J1	0.00836	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/19/2017	Background	< 0.93 U1	< 1.05 U1	79.28	0.15 J1	< 0.07 U1	0.58 J1	0.72 J1	3.43	< 0.083 U1	< 0.68 U1	0.01353	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-4
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.36	391	653	0.6203 J1	7.2	190	2352
7/25/2016	Background	0.455	729	1055	< 0.083 U1	7.4	694	4084
9/01/2016	Background	0.402	569	1065	0.5614 J1	7.1	671	3500
11/02/2016	Background	0.393	513	993	0.374 J1	7.4	538	3450
12/15/2016	Background	0.305	280	930	0.3995 J1	7.3	434	2980
2/01/2017	Background	0.445	669	1159	< 0.083 U1	6.8	747	3720
2/21/2017	Background	0.365	439	730	< 0.083 U1	7.2	186	2404
5/02/2017	Background	0.376	496	1024	0.44 J1	6.9	572	3370
6/29/2017	Background	0.264	264	659	0.4605 J1	7.0	157	2276
7/19/2017	Background	0.296	306	1052	< 0.083 U1	6.9	557	3120
8/10/2017	Detection	0.429	648	1105	0.512 J1	7.0	692	3788
4/26/2018	Detection	0.347	383	1140	< 0.083 U1	7.0	557	3654
9/05/2018	Detection	0.255	516	1241	< 0.083 U1	6.8	748	5442
12/20/2018	Detection	--	--	110	--	--	--	2792
4/17/2019	Detection	0.261	452	1000	0.38	7.0	164	2798
9/19/2019	Detection	0.330	573	895	0.34	7.0	157	2780
5/27/2020	Detection	0.206	328	831	0.27	7.5	246	2390
11/09/2020	Detection	0.384	664	1150	0.26	7.5	634	3150
12/22/2020	Detection	--	--	--	--	6.4	--	--
6/29/2021	Detection	0.390	458	895	0.32	6.8	351	2630
11/29/2021	Detection	0.49	692	1020	0.22	6.7	496	2900
6/07/2022	Detection	0.263	492	1010	0.2 J1	5.7	497	4100
6/24/2022	Detection	--	--	--	--	6.1	--	--
11/28/2022	Detection	0.358	600	1180	0.2 J1	6.9	579	3100
6/14/2023	Detection	0.215	445	997	0.24	6.7	309	2640 S7
11/29/2023	Detection	0.143	366	840	0.27	6.7	93	2170
6/25/2024	Detection	0.214	444	881	0.26	6.2	249	2640
11/19/2024	Detection	0.150	418	1020	0.24	6.5	435	2800 S7
6/26/2025	Detection	0.35	537	1050	0.28	6.1	488	3210 S7
8/27/2025	Detection	--	--	--	--	6.2	--	--
11/18/2025	Detection	0.31	547	1010	0.28	7.1	381	2680 S7

Table 1. Groundwater Data Summary: MW-4
Turk - LF
Appendix IV Constituents

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
6/01/2016	Background	< 0.93 U1	1.83781 J1	69	0.23746 J1	< 0.07 U1	7	3.34813 J1	--	0.6203 J1	1.47143 J1	0.131	0.01634 J1	2.98754 J1	6	< 0.86 U1
7/25/2016	Background	< 0.93 U1	< 1.05 U1	110	0.454281 J1	< 0.07 U1	19	8	--	< 0.083 U1	4.81995 J1	0.162	0.01917 J1	1.38966 J1	3.81662 J1	< 0.86 U1
9/01/2016	Background	1.44388 J1	1.75655 J1	144	0.506995 J1	< 0.07 U1	23	9	1.909	0.5614 J1	6	0.098	0.028	3.08827 J1	13	< 0.86 U1
11/02/2016	Background	2.65159 J1	1.40633 J1	56	0.0976 J1	< 0.07 U1	4	2.56138 J1	1.195	0.374 J1	2.26641 J1	0.105	< 0.005 U1	1.80188 J1	13	< 0.86 U1
12/15/2016	Background	< 0.93 U1	2.20107 J1	63	0.0334569 J1	< 0.07 U1	0.630135 J1	0.943538 J1	2.64	0.3995 J1	< 0.68 U1	0.125	< 0.005 U1	3.76575 J1	< 0.99 U1	< 0.86 U1
2/01/2017	Background	1.15118 J1	< 1.05 U1	29	< 0.02 U1	< 0.07 U1	0.266332 J1	0.771837 J1	0.913	< 0.083 U1	< 0.68 U1	0.072	0.00591 J1	0.342891 J1	11	< 0.86 U1
2/21/2017	Background	0.987123 J1	< 1.05 U1	78	0.170596 J1	< 0.07 U1	9	4.18392 J1	4.46	< 0.083 U1	2.76588 J1	0.104	0.01482 J1	2.52827 J1	7	< 0.86 U1
5/02/2017	Background	2.26 J1	< 1.05 U1	41.07	0.03 J1	< 0.07 U1	0.33 J1	1.02 J1	4.274	0.44 J1	< 0.68 U1	0.09813	0.006 J1	1.41 J1	4.09 J1	< 0.86 U1
6/29/2017	Background	< 0.93 U1	< 1.05 U1	65.4	0.05 J1	< 0.07 U1	1.05	1.64 J1	13.21	0.4605 J1	< 0.68 U1	0.116	< 0.005 U1	2.65 J1	< 0.99 U1	< 0.86 U1
7/19/2017	Background	< 0.93 U1	2.44 J1	64.91	0.07 J1	< 0.07 U1	1.4	1.64 J1	3.521	< 0.083 U1	1.34 J1	0.133	0.013 J1	3.06 J1	1.18 J1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-5
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.06	284	100	0.4866 J1	7.7	329	1272
7/25/2016	Background	0.04	491	188	0.4938 J1	7.7	465	1694
9/01/2016	Background	0.05	251	96	0.408 J1	7.5	319	1250
11/02/2016	Background	0.06	234	80	0.5023 J1	7.6	281	1034
12/15/2016	Background	0.03	217	55	0.2941 J1	7.7	220	1036
2/01/2017	Background	0.05	272	78	0.7224 J1	6.8	265	1092
2/21/2017	Background	0.06	270	80	< 0.083 U1	7.7	273	1156
5/02/2017	Background	0.06152	275	91	0.54 J1	7.1	287	1192
6/29/2017	Background	0.04842	248	73	< 0.083 U1	7.0	228	1104
7/19/2017	Background	0.04983	208	66	< 0.083 U1	6.6	216	932
8/10/2017	Detection	0.06474	267	70	< 0.083 U1	6.8	233	1052
4/26/2018	Detection	0.08795	310	105	< 0.083 U1	7.0	303	1408
9/05/2018	Detection	0.086	380	134	< 0.083 U1	6.4	273	1502
4/17/2019	Detection	0.082	290	138	0.30	7.2	343	1292
9/19/2019	Detection	0.075	306	110	0.27	6.8	275	1326
5/27/2020	Detection	0.078	301	114	0.28	7.4	319	1320
11/09/2020	Detection	0.060	240	75.2	0.30	7.5	273	1080
12/22/2020	Detection	--	--	--	--	6.5	--	--
6/29/2021	Detection	0.095	284	140	0.33	6.8	339	1400
11/29/2021	Detection	0.16 J1	419	155	0.30	6.7	371	1430
6/07/2022	Detection	0.035 J1	220	62.3	0.27	6.4	210	950
11/28/2022	Detection	0.025 J1	262	166	0.28	7.1	273	1120
6/14/2023	Detection	0.064	279	135	0.28	6.6	312	1290
11/29/2023	Detection	0.049 J1	51.2	82.9	0.26	6.7	283	1030
6/25/2024	Detection	0.062	270	103	0.30	6.6	292	1160
11/19/2024	Detection	0.068	303	76.5	0.35	6.7	264	930
6/26/2025	Detection	0.05 J1	223	69.3	0.34	6.8	229	980 S7
11/18/2025	Detection	0.05 J1	228	61.0	0.34	6.7	224	940

Table 1. Groundwater Data Summary: MW-5
Turk - LF
Appendix IV Constituents

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
6/01/2016	Background	< 0.93 U1	< 1.05 U1	40	0.0620377 J1	< 0.07 U1	0.662999 J1	0.611001 J1	--	0.4866 J1	< 0.68 U1	0.049	0.02124 J1	1.45446 J1	2.29756 J1	< 0.86 U1
7/25/2016	Background	4.2029 J1	< 1.05 U1	42	0.165141 J1	< 0.07 U1	2	1.38215 J1	--	0.4938 J1	1.36311 J1	0.164	0.01234 J1	4.13266 J1	8	< 0.86 U1
9/01/2016	Background	0.948881 J1	< 1.05 U1	41	0.141298 J1	< 0.07 U1	0.560473 J1	0.970337 J1	1.411	0.408 J1	< 0.68 U1	0.024	0.01038 J1	3.3054 J1	1.06126 J1	< 0.86 U1
11/02/2016	Background	< 0.93 U1	< 1.05 U1	38	< 0.02 U1	< 0.07 U1	0.37232 J1	0.68278 J1	3.11	0.5023 J1	< 0.68 U1	0.024	< 0.005 U1	0.760667 J1	1.57137 J1	< 0.86 U1
12/15/2016	Background	< 0.93 U1	< 1.05 U1	35	< 0.02 U1	< 0.07 U1	0.558695 J1	0.494922 J1	1.159	0.2941 J1	< 0.68 U1	0.015	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/01/2017	Background	< 0.93 U1	< 1.05 U1	43	< 0.02 U1	< 0.07 U1	0.86197 J1	0.547445 J1	0.632	0.7224 J1	< 0.68 U1	0.018	0.01495 J1	0.862299 J1	< 0.99 U1	< 0.86 U1
2/21/2017	Background	< 0.93 U1	< 1.05 U1	43	< 0.02 U1	< 0.07 U1	1	0.733647 J1	0.747	< 0.083 U1	< 0.68 U1	0.021	0.00912 J1	0.957474 J1	< 0.99 U1	< 0.86 U1
5/02/2017	Background	1.2 J1	< 1.05 U1	38.42	< 0.02 U1	< 0.07 U1	0.420 J1	0.600 J1	4.45	0.54 J1	< 0.68 U1	0.02349	0.016 J1	1.11 J1	< 0.99 U1	< 0.86 U1
6/29/2017	Background	< 0.93 U1	< 1.05 U1	35.21	< 0.02 U1	< 0.07 U1	< 0.230 U1	0.680 J1	5.057	< 0.083 U1	< 0.68 U1	0.01696	0.011 J1	2.2 J1	< 0.99 U1	< 0.86 U1
7/19/2017	Background	< 0.93 U1	< 1.05 U1	35.22	< 0.02 U1	< 0.07 U1	0.460 J1	0.810 J1	1.381	< 0.083 U1	0.95 J1	0.01583	0.026	0.97 J1	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-10
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.07	245	509	0.5264 J1	7.8	582	2252
7/25/2016	Background	0.07	348	680	0.4623 J1	6.7	960	2936
9/01/2016	Background	0.08	349	400	0.5157 J1	6.6	444	1896
11/02/2016	Background	0.09	407	378	0.373 J1	6.8	499	1916
12/15/2016	Background	0.05	363	514	0.3419 J1	6.3	559	2298
2/01/2017	Background	0.05	369	53	1.2456	6.0	62	2280
2/21/2017	Background	0.177	673	762	< 0.083 U1	7.8	1452	3814
5/02/2017	Background	0.08024	213	305	0.52 J1	5.8	371	1618
6/29/2017	Background	0.08018	256	277	1.1688	5.8	389	1666
7/19/2017	Background	0.0858	454	470	3.1700	6.3	560	2146
8/10/2017	Detection	0.07623	392	544	0.37 J1	6.2	619	2252
4/26/2018	Detection	0.06224	298	326	0.9038 J1	7.3	452	1826
9/05/2018	Detection	0.074	410	405	< 0.083 U1	7.5	484	1872
4/17/2019	Detection	0.046	313	431	0.21	7.4	554	2002
9/19/2019	Detection	0.05 J1	339	365	0.21	6.6	481	1900
5/27/2020	Detection	0.04 J1	389	378	0.19	7.6	487	1780
11/09/2020	Detection	0.04 J1	264	282	0.24	6.4	366	1610
6/29/2021	Detection	0.033 J1	254	320	0.24	6.2	420	1720
11/29/2021	Detection	0.03 J1	222	240	0.18	6.4	278	1430
6/24/2022	Detection	< 0.02 U1	216	207	< 0.064 U1	6.4	295	1230
11/28/2022	Detection	0.267	706	992	0.33	6.6	1710	3800
1/19/2023	Detection	--	696	--	--	6.7	--	--
6/14/2023	Detection	0.052	307	238	0.21	6.8	444	1580
11/29/2023	Detection	0.038 J1	172	79.2	0.18	6.8	161	900
6/25/2024	Detection	0.038 J1	273	226	0.23	6.3	479	1580
11/19/2024	Detection	0.035 J1	190	67.6	0.25	6.6	143	850 S7
6/26/2025	Detection	0.05 J1	236	136	0.25	6.2	301	1180
11/18/2025	Detection	0.04 J1	196	92.3	0.25	7.2	192	1120 S7

Table 1. Groundwater Data Summary: MW-10
Turk - LF
Appendix IV Constituents

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
6/01/2016	Background	< 0.93 U1	< 1.05 U1	68	0.0420664 J1	< 0.07 U1	2	0.608593 J1	--	0.5264 J1	< 0.68 U1	0.039	0.01929 J1	0.808299 J1	1.28039 J1	< 0.86 U1
7/25/2016	Background	< 0.93 U1	< 1.05 U1	57	0.0790461 J1	< 0.07 U1	0.841449 J1	0.890358 J1	--	0.4623 J1	< 0.68 U1	0.073	0.00766 J1	1.38895 J1	1.70224 J1	0.912736 J1
9/01/2016	Background	< 0.93 U1	< 1.05 U1	55	0.0599978 J1	< 0.07 U1	1	0.876633 J1	0.525	0.5157 J1	< 0.68 U1	0.029	0.00756 J1	1.18242 J1	< 0.99 U1	< 0.86 U1
11/02/2016	Background	1.07709 J1	< 1.05 U1	51	< 0.02 U1	< 0.07 U1	0.843928 J1	0.995858 J1	0.658	0.373 J1	0.773158 J1	0.042	< 0.005 U1	1.02999 J1	< 0.99 U1	< 0.86 U1
12/15/2016	Background	< 0.93 U1	< 1.05 U1	51	< 0.02 U1	< 0.07 U1	1	0.642068 J1	0.951	0.3419 J1	< 0.68 U1	0.017	< 0.005 U1	0.729956 J1	< 0.99 U1	< 0.86 U1
2/01/2017	Background	< 0.93 U1	< 1.05 U1	60	< 0.02 U1	< 0.07 U1	1	0.67122 J1	0.344	1.2456	< 0.68 U1	0.02	0.00911 J1	0.7751 J1	< 0.99 U1	< 0.86 U1
2/21/2017	Background	< 0.93 U1	< 1.05 U1	47	< 0.02 U1	< 0.07 U1	2	0.951093 J1	0.63	< 0.083 U1	0.870989 J1	0.095	0.01349 J1	2.06399 J1	< 0.99 U1	< 0.86 U1
5/02/2017	Background	< 0.93 U1	< 1.05 U1	58.09	< 0.02 U1	< 0.07 U1	1.43	0.74 J1	1.4731	0.52 J1	< 0.68 U1	0.01559	< 0.005 U1	0.59 J1	< 0.99 U1	< 0.86 U1
6/29/2017	Background	< 0.93 U1	< 1.05 U1	52.23	< 0.02 U1	< 0.07 U1	1.24	0.61 J1	2.112	1.1688	0.83 J1	0.01916	< 0.005 U1	0.59 J1	< 0.99 U1	< 0.86 U1
7/19/2017	Background	< 0.93 U1	< 1.05 U1	48.43	< 0.02 U1	< 0.07 U1	1.90	0.77 J1	3.154	3.1700	1.1 J1	0.0401	0.007 J1	0.870 J1	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-11
Turk - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L
6/01/2016	Background	0.222	656	784	0.5131 J1	8.0	1116	3432
7/25/2016	Background	0.158	554	668	0.4984 J1	7.3	760	3031
9/01/2016	Background	0.151	527	699	0.543 J1	6.6	726	2956
11/02/2016	Background	0.165	544	729	0.4413 J1	6.9	830	2980
12/15/2016	Background	0.152	524	675	0.448 J1	6.2	718	2376
2/01/2017	Background	0.156	516	748	< 0.083 U1	6.1	820	2876
2/21/2017	Background	0.155	507	682	< 0.083 U1	8.0	740	2856
5/02/2017	Background	0.141	491	758	0.49 J1	6.0	757	--
6/29/2017	Background	0.15	522	682	0.4399 J1	6.4	704	2928
7/19/2017	Background	0.161	532	711	< 0.083 U1	6.1	740	2804
8/10/2017	Background	0.158	533	727	0.546 J1	--	734	2868
4/26/2018	Background	0.158	531	792	< 0.083 U1	7.5	827	3306
9/05/2018	Background	0.165	709	948	0.483 J1	7.5	969	3414
4/17/2019	Background	0.133	529	867	0.36	7.4	923	3656
9/19/2019	Background	0.147	614	837	0.34	6.6	863	3520
5/27/2020	Background	<0.200 U1	540	870	0.307	7.6	860	3280
11/09/2020	Background	<0.200 U1	527	808	0.4	6.5	819	2930
6/29/2021	Background	<0.200 U1	536	855	0.398	6.2	909	2990
11/29/2021	Background	<0.200 U1	545	790	0.400 B	6.8	762	2670
6/07/2022	Background	<0.200 U1	514	687	<0.150 U1	6.1	625	2110
11/28/2022	Background	<0.200 U1	472	752	0.279	6.7	757	2410
6/14/2023	Background	<0.200 U1	521	806	0.343	6.5	913	2810
11/29/2023	Background	0.133	492	849	0.31	7.4	850	2680
6/25/2024	Detection	0.129	505	819	0.36	7.0	899	2880
11/19/2024	Detection	0.131	530	744	0.39	7.5	779	2640 S7
6/26/2025	Detection	0.16 J1	505	720	0.41	6.5	771	2780 S7
11/18/2025	Detection	0.15 J1	511	743	0.42	6.7	779	2670

Notes:
Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.
Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.
--: Not analyzed
<: 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.
B: The same analyte is found in the associated blank.
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.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
P3: The precision on the matrix spike duplicate (MSD) was above acceptance limits.
pCi/L: picocuries per liter
S7: Sample did not achieve constant weight.
SU: standard unit
µg/L: micrograms per liter

Table 1: Residence Time Calculation Summary
Turk Landfill

Geosyntec Consultants, Inc.

			2025-01[3]		2025-06		2025-08[3]		2025-11	
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)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	MW-1 [1]	2.0	15.3	4.0	13.6	4.5	16.2	3.8	17.7	3.4
	MW-2 [2]	2.0	9.7	6.3	10.1	6.0	10.9	5.6	8.7	7.0
	MW-3 [2]	2.0	19.4	3.1	14.3	4.3	23.3	2.6	27.0	2.3
	MW-4 [2]	2.0	19.3	3.2	14.2	4.3	21.3	2.9	10.7	5.7
	MW-5 [2]	2.0	21.9	2.8	25.5	2.4	29.6	2.1	25.7	2.4
	MW-10 [2]	2.0	14.6	4.2	14.9	4.1	24.7	2.5	24.9	2.4
	MW-11 [2]	2.0	25.8	2.4	35.0	1.7	49.2	1.2	54.0	1.1

Notes:
[1] - Background Well
[2] - Downgradient Well
[3] - Only select wells were gauged as part of two-of-two verification sampling
MW-11 was added to the CCR network in June 2024 and will now be included in the calculations.

Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction
- Property Boundary

Notes

1. Monitoring well coordinates and water level data (collected on January 7, 2025) provided by AEP.
2. MW-9D was not gauged during the January 2025 event.
3. Site features based on information available in Revision 1 - Groundwater Monitoring Network for CCR Compliance - John W. Turk, Jr. Power Plant Class 3N Landfill (Terracon, June 2024) provided by AEP.
4. Groundwater elevation units are feet above mean sea level (ft amsl).
5. MW-9D is screened within the lower aquifer and excluded from the potentiometric surface calculations.
6. Wells MW-1 through MW-11 were resurveyed on August 30, 2023.
7. Aerial imagery provided by the Arkansas Spatial Data Infrastructure (ASDI) Map Viewer (2023).

0 250 500 1,000 Feet

Groundwater Elevation Contour Map
January 2025

AEP Turk Power Plant - Landfill
Fulton, Arkansas

Geosyntec consultants

Columbus, Ohio | 2026/01/19

Figure **X**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Turk\2025\Turk_Jan2025_wo_9D_v1.mxd. okiemute.commander. 1/19/2026. CHA8423/02/08.

Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Flow Direction
- Property Boundary

Notes

1. Monitoring well coordinates and water level data (collected on June 26, 2025) provided by AEP.
2. Site features based on information available in Revision 1 - Groundwater Monitoring Network for CCR Compliance - John W. Turk, Jr. Power Plant Class 3N Landfill (Terracon, June 2024) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft amsl).
4. MW-9D is screened within the lower aquifer and excluded from the potentiometric surface calculations.
5. Wells MW-1 through MW-11 were resurveyed on August 30, 2023.
6. Aerial imagery provided by the Arkansas Spatial Data Infrastructure (ASDI) Map Viewer (2023).

500 250 0 500 Feet

Groundwater Elevation Contour Map
June 2025

AEP Turk Power Plant - Landfill
Fulton, Arkansas

Geosyntec consultants

Columbus, Ohio | 2025/08/15

Figure X

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Turk\2025\Turk_Jun2025_wo_9D.mxd. okiemute.commander. 8/15/2025. CHA8423/02/08.

Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Flow Direction
- Property Boundary

Notes

1. Monitoring well coordinates and water level data (collected on August 27, 2025) provided by AEP.
2. Site features based on information available in Revision 1 - Groundwater Monitoring Network for CCR Compliance - John W. Turk, Jr. Power Plant Class 3N Landfill (Terracon, June 2024) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft amsl).
4. MW-7 and MW-9D were not gauged during the August 2025 event.
5. MW-9D is screened within the lower aquifer and excluded from the potentiometric surface calculations.
6. Wells MW-1 through MW-11 were resurveyed on August 30, 2023.
7. Aerial imagery provided by the Arkansas Spatial Data Infrastructure (ASDI) Map Viewer (2023).

Groundwater Elevation Contour Map
August 2025

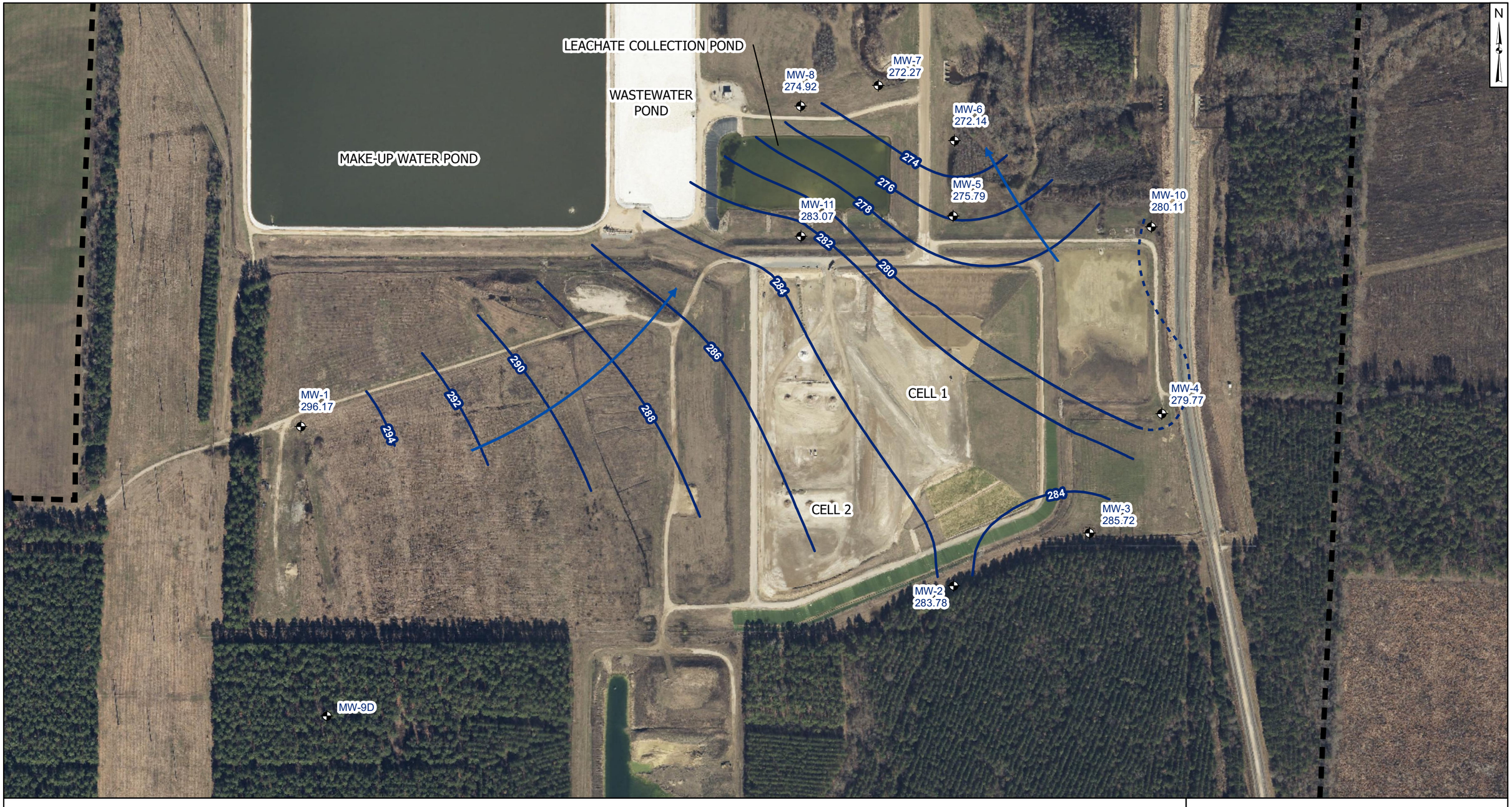
AEP Turk Power Plant - Landfill
Fulton, Arkansas

Geosyntec consultants

Columbus, Ohio | 2026/01/19

Figure
X

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Turk\2025\Turk_Aug2025_ver_wo_9D.mxd. okiemute.commander. 1/19/2026. CHA8423/02/08.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Groundwater Flow Direction
- Property Boundary

Notes

1. Monitoring well coordinates and water level data (collected on November 18, 2025) provided by AEP.
2. Site features based on information available in Revision 1 - Groundwater Monitoring Network for CCR Compliance - John W. Turk, Jr. Power Plant Class 3N Landfill (Terracon, June 2024) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft amsl).
4. MW-9D is screened within the lower aquifer and excluded from the potentiometric surface calculations.
5. Wells MW-1 through MW-11 were resurveyed on August 30, 2023.
6. Aerial imagery provided by the Arkansas Spatial Data Infrastructure (ASDI) Map Viewer (2023).

0 250 500 1,000 Feet

Groundwater Elevation Contour Map
November 2025

AEP Turk Power Plant - Landfill
Fulton, Arkansas

Geosyntec consultants

Columbus, Ohio | 2026/01/19

Figure **X**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Turk\2025\Turk_Nov2025_wo_9D.mxd. okiemute.commander. 1/19/2026. CHA8423/02/08.

APPENDIX 2- Statistical Analyses

The reports summarizing the statistical evaluation follow.

Geosyntec consultants

500 West Wilson Bridge Road, Suite 250
Worthington, Ohio 43085
PH 614.468.0415
FAX 614.468.0416
www.geosyntec.com

Memorandum

Date:	April 11, 2025
To:	David Miller (AEP)
Copies to:	Bill Smith (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of 2nd Event 2024 Detection Monitoring Data at Turk Plant's Landfill

In accordance with United States Environmental Protection Agency (USEPA) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR 257 Subpart D, "CCR rule"), the second semiannual detection monitoring event of 2024 at the Landfill, an existing CCR unit at the Turk Power Plant located in Fulton, Arkansas, was completed on November 19, 2024. Based on these initial sampling results, resampling was completed on January 7, 2025.

Background values for the Turk Landfill were originally calculated in December 2017 and have been periodically updated as sufficient data becomes available. After a minimum of four additional detection monitoring events, the results of those events were compared to the existing background, and the background 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 most recent calculation of the revised background values are described in Geosyntec's *Statistical Analysis Summary* report, dated October 4, 2024, and included in the Annual Groundwater Monitoring Report, dated January 31, 2025.

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 concluded only if both samples in a series of two exceed the UPL (or are below the LPL for pH).

Detection monitoring results and the relevant background values are compared in Table 1. No SSIs were observed at the Turk Landfill CCR unit, and as a result the Turk Landfill will remain in

detection monitoring. The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with 40 CFR 257.93(h)(2). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

Table 1: Detection Monitoring Data Summary
Turk Plant – Landfill

Analyte	Unit	Description	MW-2	MW-3		MW-4	MW-5	MW-10	MW-11
			11/19/2024	11/19/2024	1/7/2025	11/19/2024	11/19/2024	11/19/2024	11/19/2024
Boron	mg/L	Intrawell Background Value (UPL)	0.401	0.188		0.517	0.123	0.233	0.187
		Analytical Result	0.048	0.078	--	0.150	0.068	0.035	0.131
Calcium	mg/L	Intrawell Background Value (UPL)	133	237		766	380	475	709
		Analytical Result	92	**273**	152	418	303	190	530
Chloride	mg/L	Intrawell Background Value (UPL)	41.7	305		1,241	177	836	924
		Analytical Result	22.3	**329**	207	1,020	76.5	67.6	744
Fluoride	mg/L	Intrawell Background Value (UPL)	0.523	0.978		1.00	1.00	1.25	0.626
		Analytical Result	0.36	0.33	--	0.24	0.35	0.25	0.39
pH	SU	Intrawell Background Value (UPL)	8.3	8.0		7.6	7.8	7.6	8.1
		Intrawell Background Value (LPL)	6.4	6.4		6.2	6.1	5.8	5.6
		Analytical Result	7.7	7.3	--	6.5	6.7	6.6	7.5
Sulfate	mg/L	Intrawell Background Value (UPL)	347	497		894	406	1,710	1,028
		Analytical Result	46.6	381	--	435	264	143	779
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	719	1,317		4,734	1,601	3,854	3,724
		Analytical Result	360	**1,420**	1,060	2,800	930	850	2,640

Notes:

1. Bold values exceed the background value.

2. Background values are shaded gray.

LPL: lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: upper prediction limit

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the October 4, 2024 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Turk Landfill CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

Signature

15296	**Arkansas**	**04.14.2025**
License Number	Licensing State	Date

Geosyntec consultants

500 West Wilson Bridge Road, Suite 250
Worthington, Ohio 43085
PH 614.468.0415
FAX 614.468.0416
www.geosyntec.com

Memorandum

Date:	November 21, 2025
To:	David Miller (AEP)
Copies to:	Rachel Scroggins (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Turk Plant's Landfill

In accordance with United States Environmental Protection Agency (USEPA) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR 257 Subpart D, "CCR rule"), the first semiannual detection monitoring event of 2025 at the Landfill, an existing CCR unit at the Turk Power Plant located in Fulton, Arkansas, was completed on June 26, 2025. Based on these initial sampling results, resampling was completed on September 16, 2025.

Background values for the Turk Landfill were originally calculated in December 2017 and have been periodically updated as sufficient data becomes available. After a minimum of four additional detection monitoring events, the results of those events were compared to the existing background, and the background 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 most recent calculation of the revised background values are described in Geosyntec's *Statistical Analysis Summary* report, dated October 4, 2024, and included in the Annual Groundwater Monitoring Report, dated January 31, 2025.

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 concluded only if both samples in a series of two exceed 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 below:

- Chloride concentrations exceeded the intrawell UPL of 305 mg/L in both the initial (306 mg/L) and second (426 mg/L) samples collected at MW-3. Therefore, an SSI over background is concluded for chloride at MW-3.

In response to exceedance noted above, the Turk Landfill CCR unit will either transition to assessment monitoring or an alternative source demonstration (ASD) for chloride will be conducted in accordance with 40 CFR 257.94(e)(2). If the ASD is successful, the Turk Landfill will remain in detection monitoring.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with 40 CFR 257.93(h)(2). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

Table 1: Detection Monitoring Data Summary
Turk Plant – Landfill

Geosyntec Consultants

Analyte	Unit	Description	MW-2	MW-3		MW-4		MW-5	MW-10	MW-11
			6/26/2025	6/26/2025	9/16/2025	6/26/2025	8/27/2025	6/26/2025	6/26/2025	6/26/2025
Boron	mg/L	Intrawell Background Value (UPL)	0.401	0.188		0.517		0.123	0.233	0.187
		Analytical Result	<0.04	0.07	--	0.35	--	0.05	0.05	0.16
Calcium	mg/L	Intrawell Background Value (UPL)	133	237		766		380	475	709
		Analytical Result	71.3	192	--	537	--	223	236	505
Chloride	mg/L	Intrawell Background Value (UPL)	41.7	305		1241		177	836	924
		Analytical Result	10.0	**306**	**426**	1050	--	69.3	136	720
Fluoride	mg/L	Intrawell Background Value (UPL)	0.523	0.978		1.00		1.00	1.25	0.626
		Analytical Result	0.40	0.35	--	0.28	--	0.34	0.25	0.41
pH	SU	Intrawell Background Value (UPL)	8.3	8.0		7.6		7.8	7.6	8.1
		Intrawell Background Value (LPL)	6.4	6.4		6.2		6.1	5.8	5.6
		Analytical Result	7.0	7.2	--	**6.1**	6.2	6.8	6.2	6.5
Sulfate	mg/L	Intrawell Background Value (UPL)	347	497		894		406	1710	1028
		Analytical Result	20.1	330	--	488	--	229	301	771
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	719	1317		4734		1601	3854	3724
		Analytical Result	300	1,270	--	3,210	--	980	1,180	2,780

Notes:

1. Bold values exceed the background value.

2. Background values are shaded gray.

--: not sampled

LPL: lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: upper prediction limit

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the October 4, 2024 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Turk Landfill CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

Signature

15296	**Arkansas**	**12.15.2025**
License Number	Licensing State	Date

APPENDIX 3- Alternate Source Demonstrations

No alternate source demonstrations (ASDs) have been completed at this time. 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 - Notices for Monitoring Program Transitions

No transition between monitoring requirements occurred in 2025; the CCR unit was in detection monitoring at the beginning and at the end of the year. Notices for monitoring program transitions are not applicable at this time.

APPENDIX 5 - Well Installation/Decommissioning Logs

No wells were installed or decommissioned in 2025. Well installation/decommissioning logs are not applicable at this time.