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April 1st, 2024

REVIEWED

By Mike Buchanan at 1:23 pm, Feb 28, 2025

Nelson Velez

New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: **2023 Annual Report**

Rice Operating Company – EME SWD System
EME H-20 SWD (1R427-87): UL H, Sec 20, T20S, R37E
Application ID: 202257, Incident ID: nAPP2109547013

Sent by E-mail

Mr. Velez:

This letter summarizes progress made over the past year pursuant to the NMOC
Action Plan for this site and the NMOCD approved 2022 Annual Report (A
active SWD produced water disposal facility is operated at this location by Rice Operating Company
(ROC). This project is located in the EME field approximately 4 miles south of Monument, New Mexico
(Appendix, Figure 1). Over the course of 2023 we continued to monitor up and down-gradient monitor
wells (Appendix, Figure 2) for chlorides and petroleum hydrocarbons (BTEX). A groundwater elevation
and gradient map is given in Appendix, Figure 3, and the location of the site relative to a large, regional,
up-gradient chloride plume is given in Appendix, Figure 4.

In brief:

Groundwater chlorides. Average annual groundwater chloride concentrations are given in the Appendix,
Figure 5 and Table 1. The complete groundwater dataset is given in Table 3. Year average groundwater
chloride concentrations (Table 1) in the near-source monitor well (MW-1) resulted in a concentration of
1,053 mg/l in 2022 and 1,187 mg/l in 2023¹. Year average groundwater chloride concentrations in the up-
gradient monitor well (MW-2) dropped from 910 mg/l in 2022 to 783 mg/l in 2023. Year average
groundwater chlorides in the down-gradient monitor well (MW-3) dropped from 1,043 mg/l in 2022 to
1,005 mg/l in 2023. Year average groundwater chloride concentrations in the far down-gradient monitor

Review of the 2023 Annual Report for the EME-H20 SWD (1R427-87): content satisfactory
1. Propose abatement options or set up meeting with OCD to discuss options for abatement, as previously suggested.
2. ROC must provide data from any up-gradient source that has the potential to contaminate underneath EME H-20 SWD.
3. Continue to conduct groundwater monitoring for all constituents (BTEX, TDS, sulfate and chloride) until such meeting is set with the OCD and provide annual report to OCD by April 1, 2025.

¹ We have disregarded the 4th qtr chloride measurement for MW-1 in the 2023 average, as it appears to be anomalously high. This is evidenced by a large and sudden spike in chloride concentration with a substantial drop in TDS. We will revisit this data point after we collect additional data.

Rice Operating Company EME H-20 SWD Annual Report

well (MW-4) dropped from 1,198 mg/l in 2022 to 1,105 mg/l in 2023. The year average groundwater chloride concentration in the east side-gradient monitor well (MW-5) was essentially unchanged, measuring 1,040 mg/l in 2022 vs 1,038 mg/l in 2023. Groundwater chloride concentrations in the down and side-gradient wells thus continue to slowly, if unevenly, converge toward the prevailing upgradient values (roughly 900 to 1,000 mg/l).

Groundwater benzene. Average annual groundwater benzene concentrations are given in the Appendix, Figure 6 and Table 2. The complete groundwater dataset is given in Table 3. Year average groundwater benzene concentrations in the near-source monitor well (MW-1) dropped from 0.0105 mg/l in 2022 to 0.0100 mg/l in 2023 and are less than a quarter of their high values of over a decade ago and exhibit a clear and consistent downward trend. Year average benzene concentrations in the up-gradient monitor well (MW-2) have remained below the laboratory limit of detection of 0.001 mg/l from 2018 through 2023. The year average benzene concentration in the downgradient monitor well (MW-3) dropped 0.0070 mg/l in 2022 to 0.0033 mg/l in 2023. The year average benzene concentration in the far down-gradient monitor well (MW-4) was below the laboratory limit of detection in 2023 as it was in 2022. Year average benzene concentrations in the east side gradient monitor well (MW-5) have remained below the laboratory limit of detection since 2011. Taken together, these data indicate that dissolved hydrocarbons are no longer a concern at this location.

The direction of groundwater flow across the H-20 SWD site is toward the southeast (Figure 3 & 4) as it is across the surrounding landscape. A (strikingly) large plume of high chloride impacted groundwater exists upgradient of the subject site and will essentially replace the groundwater beneath the site in the coming years (Figure 4). The general, if uneven, overall decline in groundwater chlorides observed in all of the monitor wells over the past years at the subject site will suddenly reverse. This indicates that any effort to abate groundwater chlorides beneath the subject site will be for naught when this occurs and suggests that no further remedial actions are warranted in regard to the chloride concentrations.

As ROC continues the discussion of this matter with NMOCD we will continue to monitor groundwater at the subject site through 2024.

ROC is the service provider (agent) for the EME Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The EME SWD System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Please contact either Katie Davis of Rice Operating Company or me if you have any questions or need additional information.

Rice Operating Company EME H-20 SWD Annual Report

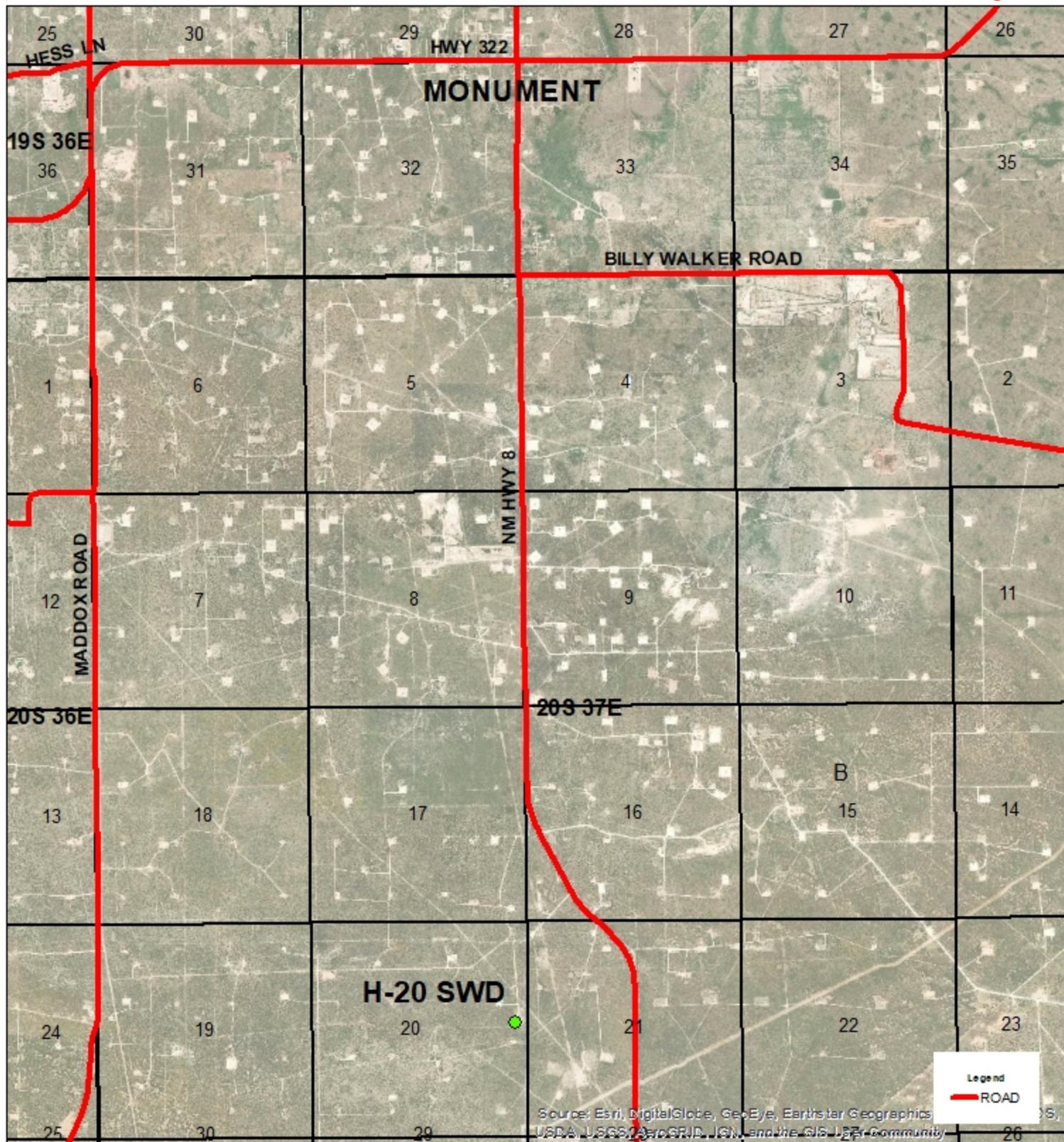
Sincerely,



L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

Copy: Rice Operating Company; Attachments: ... as noted, above.

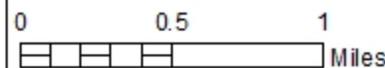
Geographic Location



EME
H-20 SWD
 1R427-87

UL H SECTION 20
 T-20-S R-37-E
 LEA COUNTY, NM

GPS: 32.559077-103.265553
 NAD83 STATE PLANE PROJ
 NM EAST ZONE



Drawing date: 2/3/20
 Drafted by: T. Grieco

Site Map



EME
H-20 SWD
1R427-87

UL H SECTION 20
T-20-S R-37-E
LEA COUNTY, NM

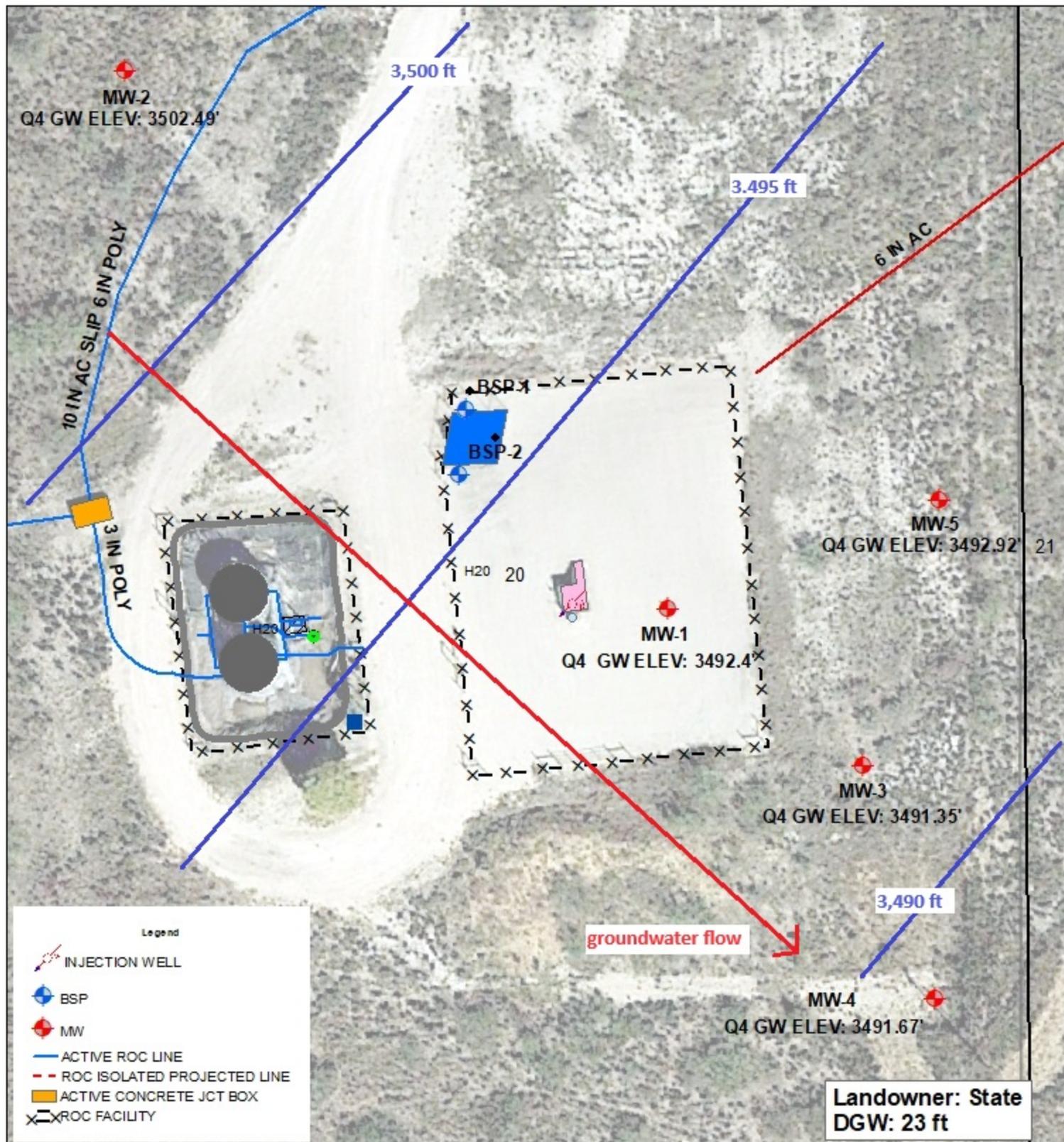
GPS: 32.559077-103.265553
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 25 50
[Scale bar] Feet

Drawing date: 2/3/20
Drafted by: T. Grieco



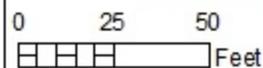
Groundwater Elevation Q4 2023



EME
H-20 SWD
 1R427-87

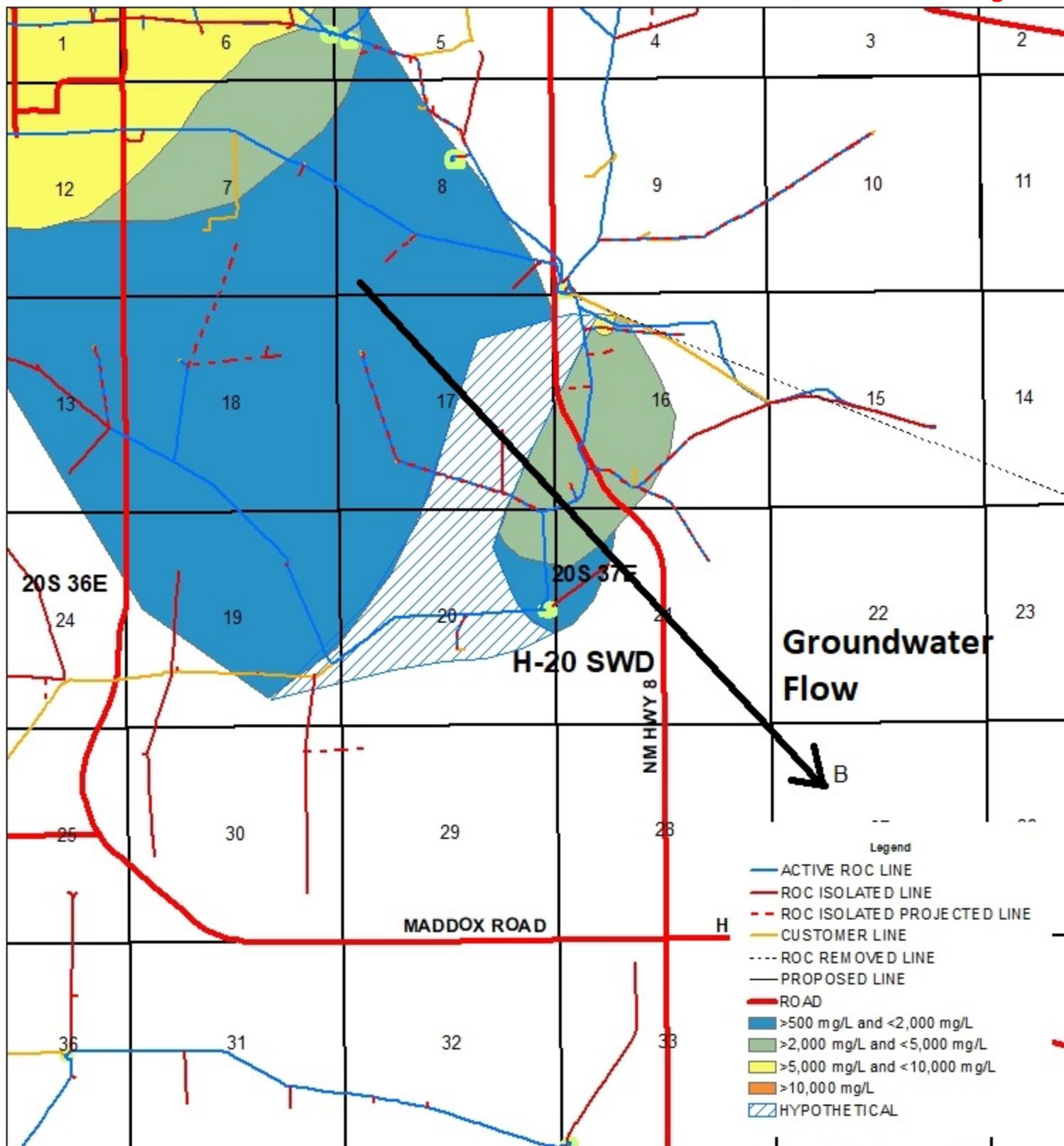
UL H SECTION 20
 T-20-S R-37-E
 LEA COUNTY, NM

GPS: 32.559077-103.265553
 NAD83 STATE PLANE PROJ
 NM EAST ZONE



Drawing date: 3/6/24
 Drafted by: T. Grieco

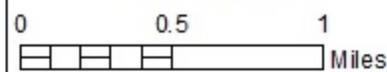
Groundwater Contamination Plume



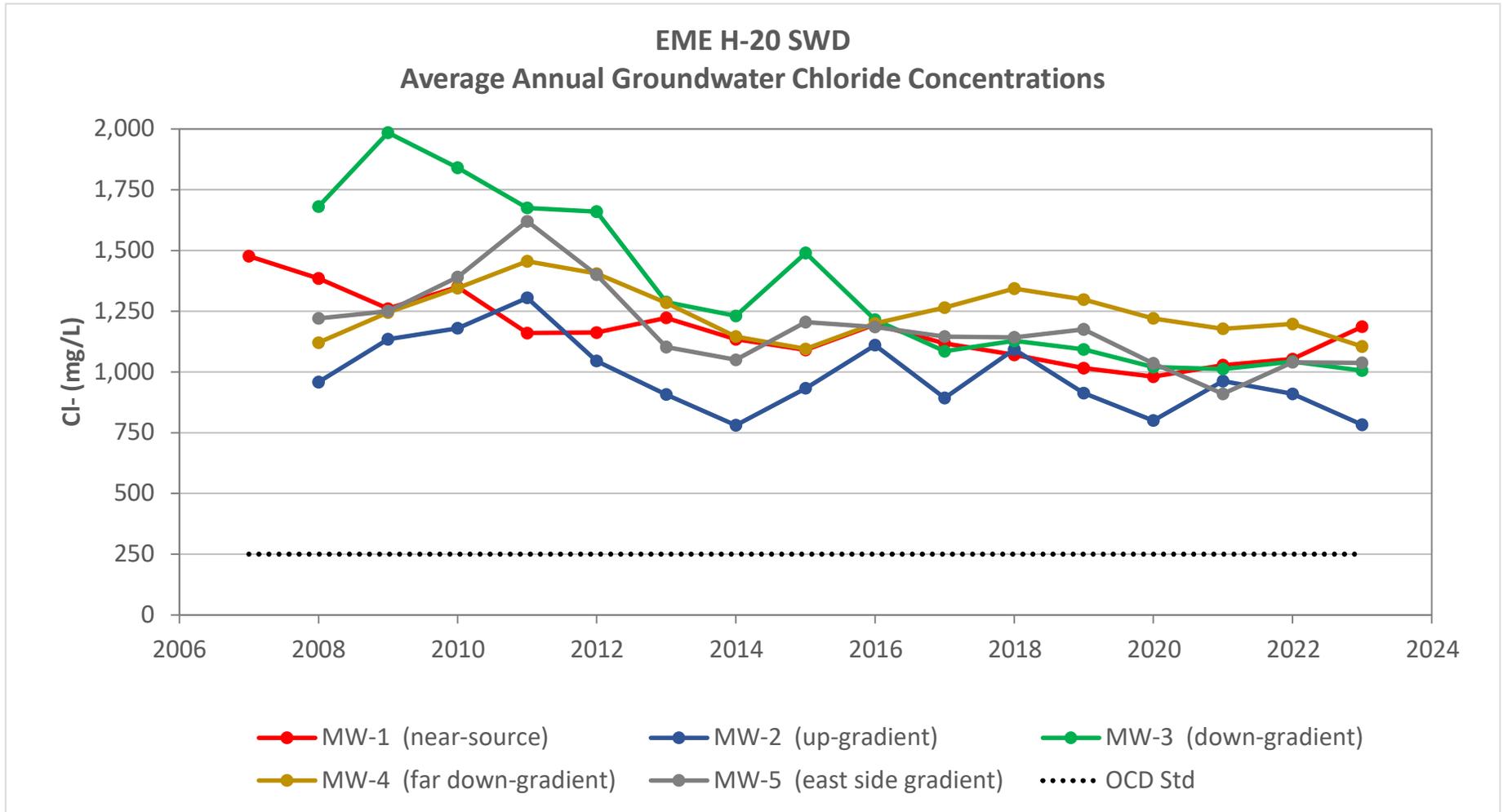
EME
H-20 SWD
1R427-87

UL H SECTION 20
T-20-S R-37-E
LEA COUNTY, NM

GPS: 32.559077 -103.265553
NAD83 STATE PLANE PROJ
NM EAST ZONE



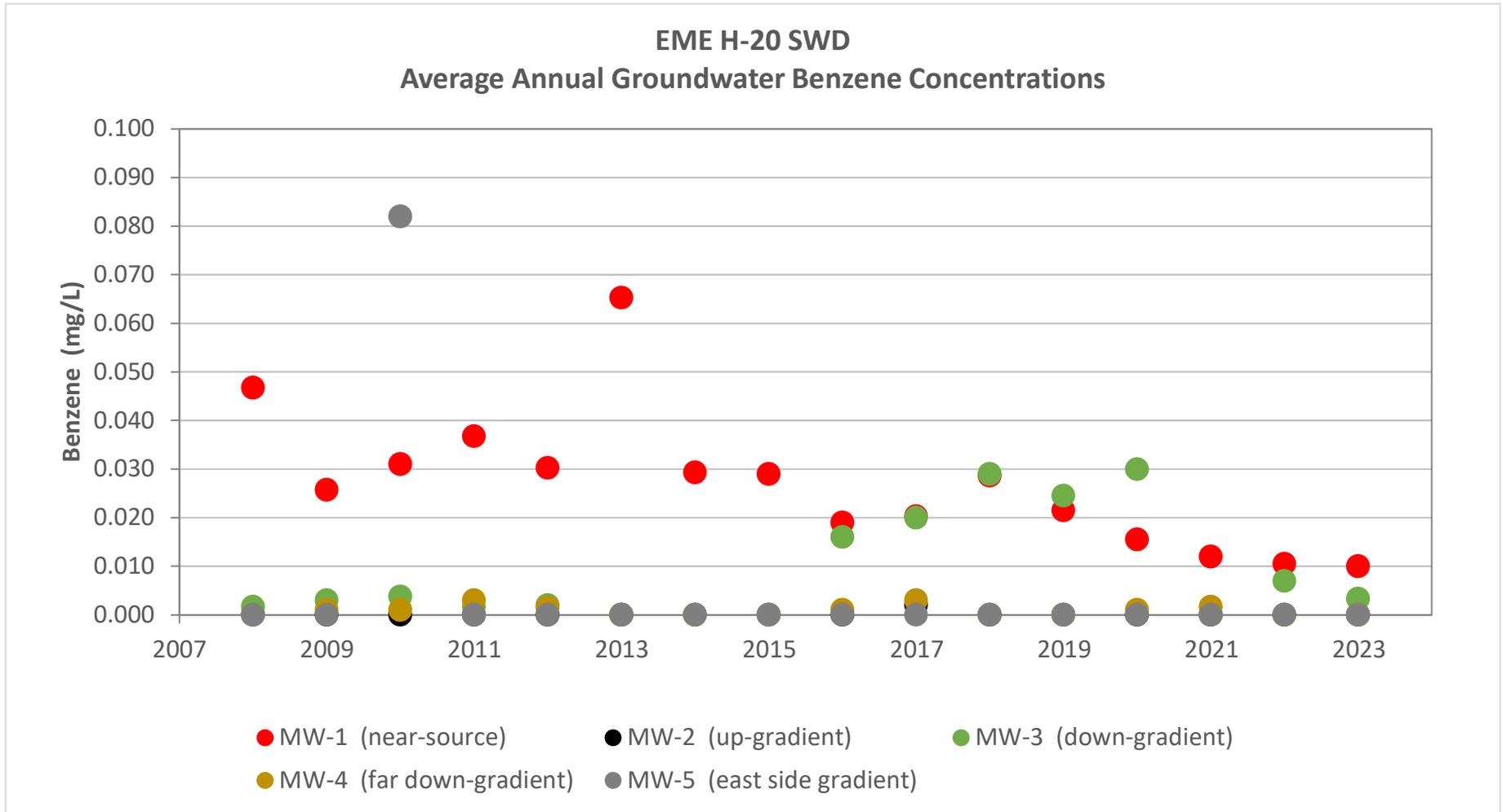
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Drafted by: T. Grieco



EME H-20 SWD Groundwater Chloride Concentrations
Average Annual Values (mg/l)

	MW-1	MW-2	MW-3	MW-4	MW-5	OCD Std
	(near-source)	(up-gradient)	(down-gradient)	(far down- gradient)	(east side gradient)	
Year						
2007	1,476					250
2008	1,385	958	1,680	1,120	1,220	250
2009	1,260	1,135	1,985	1,245	1,250	250
2010	1,350	1,180	1,840	1,345	1,390	250
2011	1,160	1,305	1,675	1,455	1,620	250
2012	1,163	1,045	1,660	1,405	1,400	250
2013	1,223	908	1,288	1,285	1,103	250
2014	1,135	780	1,230	1,145	1,050	250
2015	1,090	932	1,490	1,095	1,205	250
2016	1,195	1,110	1,215	1,200	1,185	250
2017	1,118	893	1,085	1,265	1,145	250
2018	1,070	1,093	1,128	1,343	1,143	250
2019	1,015	913	1,093	1,298	1,175	250
2020	980	800	1,020	1,220	1,035	250
2021	1,028	963	1,013	1,178	910	250
2022	1,053	910	1,043	1,198	1,040	250
2023	1,187	783	1,005	1,105	1,038	250

Note: A value of 4,050 mg/l for chloride was reported from the lab for MW-1 on 12/1/2023. We have excluded this value from analysis as we believe it to be an error. However, we will follow this closely in subsequent quarters to determine if, in fact, this data point was not spurious.



EME H-20 SWD Groundwater Benzene Concentrations (mg/l)
Average Annual Values (mg/l)

	MW-1	MW-2	MW-3	MW-4	MW-5
	(near-source)	(up- gradient)	(down- gradient)	(far down- gradient)	(east side gradient)
2008	0.0468	BD	0.0017	BD	BD
2009	0.0258	BD	0.0030	0.0010	BD
2010	0.0310	BD	0.0038	0.0010	0.0820
2011	0.0368	BD	0.0017	0.0030	BD
2012	0.0303	BD	0.0020	0.0015	BD
2013	0.0653	BD	BD	BD	BD
2014	0.0293	BD	BD	BD	BD
2015	0.0290	BD	BD	BD	BD
2016	0.0190	BD	0.0160	0.0010	BD
2017	0.0203	0.0020	0.0200	0.0030	BD
2018	0.0287	BD	0.0290	BD	BD
2019	0.0215	BD	0.0245	BD	BD
2020	0.0155	BD	0.0300	0.0010	BD
2021	0.0120	BD	BD	0.0017	BD
2022	0.0105	BD	0.0070	BD	BD
2023	0.0100	BD	0.0033	BD	BD

Note: BD indicates below the limits of laboratory detection.

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	22.89	34.95	7.8	25	4/23/2007	1,939		4,343	0.06	<0.002	<0.002	<0.006	544	Clear
1	23.45	34.95	7.5	25	7/12/2007	1,230		3,660	0.0684	<0.005	0.0157	<0.002	644	Clear
1	23.54	34.95	7.4	25	11/1/2007	1,260	1,476	3,824	0.059	<0.002	0.006	<0.006	612	Gray to clear Strong odor 0.16 inches of product in well
1	23.37	34.95	7.5	25	1/18/2008	1,420		3,896	0.052	<0.005	<0.005	<0.015	653	Hydrocarbon present Gray to clear with strong odor
1	23.25	34.95	7.6	25	4/9/2008	1,380		3,890	0.032	0.001	0.004	<0.003	862	Gray to clear Strong odor Hydrocarbon present
1	24	34.95	7.1	25	7/21/2008	1,440		4,070	0.048	<0.02	<0.02	<0.06	794	Hydrocarbon present Gray to clear Strong odor
1	23.54	34.95	7.4	25	10/20/2008	1,300	1,385	3,920	0.055	0.002	0.004	<0.003	744	Hydrocarbon present Gray to clear Strong odor
1	23.22	34.96	7.6	25	2/5/2009	1,360		3,900	0.031	0.001	0.004	<0.003	753	Hydrocarbon present Gray to clear Strong odor
1	23.13	34.96	7.7	25	5/8/2009	1,220		3,850	0.031	<0.001	<0.001	<0.003	746	Hydrocarbon present Gray to clear Strong odor
1	24.13	34.96	7	25	8/14/2009	1,180		3,690	0.024	<0.001	0.007	<0.003	694	Hydrocarbon present Gray to clear Strong odor
1	24.32	34.96	6.9	25	11/4/2009	1,280	1,260	3,840	0.017	<0.001	0.002	<0.003	631	Hydrocarbon present Gray to clear Strong odor
1	23.83	34.96	7.2	25	2/17/2010	1,360		3,800	0.03	<0.001	0.004	<0.003	946	Gray to Clear with Strong Odor
1	23.37	34.96	7.5	25	5/19/2010	1,280		3,950	0.006	<0.001	<0.001	<0.003	760	Hydrocarbon sheen Gray to clear Strong odor
1	23.11	34.96	7.7	25	8/11/2010	1,460		4,050	0.014	<0.001	0.003	<0.003	740	Hydrocarbon sheen Gray to clear Strong odor
1	23.58	34.96	7.4	25	11/4/2010	1,300	1,350	3,910	0.074	<0.002	0.004	<0.006	645	Hydrocarbon sheen Gray to clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	23.26	34.96	7.6	25	2/25/2011	1,160		3,800	0.033	0.002	0.004	0.003	756	Hydrocarbon sheen gray to clear with strong odor
1	23.51	34.96	7.4	25	5/20/2011	1,220		3,700	0.056	0.003	0.006	0.007	761	Hydrocarbon sheen gray to clear with strong odor
1	24.43	34.96	6.8	25	8/11/2011	1,080		3,640	0.034	<0.001	0.002	<0.003	779	Hydrocarbon sheen Gray to clear Strong odor
1	24.22	34.96	7	25	11/9/2011	1,180	1,160	3,580	0.024	<0.001	0.002	<0.003	827	Hydrocarbon sheen Gray to clear Strong odor
1	23.82	34.96	7.2	25	2/8/2012	1,170		3,650	0.028	<0.001	0.003	<0.003	807	Hydrocarbon sheen Gray to clear Strong odor
1	23.67	34.96	7.3	25	5/20/2012	1,100		3,500	0.027	<0.001	0.004	<0.003	639	Hydrocarbon sheen Gray to clear Strong odor
1	24.28	34.96	6.9	25	8/7/2012	1,160		3,660	0.04	0.002	0.008	<0.003	727	Hydrocarbon sheen Gray to clear Strong odor
1	24.09	34.96	7.1	25	10/31/2012	1,220	1,163	3,720	0.026	<0.001	<0.001	<0.003	686	Hydrocarbon sheen Gray to clear Strong odor
1	23.85	34.96	7.2	25	1/30/2013	1,180		3,750	0.044	<0.001	0.004	<0.003	547	Hydrocarbon sheen Gray to clear Strong odor
1	23.78	34.96	7.3	25	5/14/2013	1,230		3,860	0.082	0.002	0.008	<0.003	842	Hydrocarbon sheen Gray to clear Strong odor
1	24.16	34.96	7	25	8/14/2013	1,360		3,820	0.074	0.003	0.013	<0.003	788	Hydrocarbon sheen Gray to clear Strong odor
1	24.29	34.96	6.9	25	10/31/2013	1,120	1,223	3,830	0.061	<0.001	<0.001	<0.003	832	Hydrocarbon sheen Gray to clear Strong odor
1	23.87	34.96	7.2	25	2/18/2014	1,100		3,720	0.038	<0.001	0.003	<0.003	815	Hydrocarbon sheen Gray to clear Strong odor
1	23.77	34.96	7.3	25	4/24/2014	1,080		3,760	0.037	<0.001	0.003	<0.003	785	Hydrocarbon sheen Gray to clear Strong odor
1	24.74	34.96	6.6	25	7/31/2014	1,060		3,510	0.013	<0.001	0.002	<0.003	626	Hydrocarbon sheen Gray to clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	24.72	34.96	6.7	25	11/6/2014	1,300	1,135	4,340	<0.001	<0.001	<0.001	<0.003	983	Hydrocarbon sheen Gray to Clear Strong odor PSH Sock Changed
1	23.52	34.96	7.4	25	2/12/2015	1,030		3,500	0.029	<0.001	0.001	<0.003	789	Hydrocarbon sheen Gray to clear Strong odor PSH Sock Changed
1	23.22	34.96	7.6	25	5/6/2015	1,120		3,790	<0.001	<0.001	<0.001	<0.003	812	Hydrocarbon sheen Gray to clear Strong odor
1	23.83	34.96	7.2	25	8/11/2015	1,090		4,120	<0.001	<0.001	<0.001	<0.003	759	Hydrocarbon sheen Gray to clear Strong odor
1	23.64	34.96	7.4	25	11/5/2015	1,120	1,090	3,790	<0.001	<0.001	<0.001	<0.003	728	Hydrocarbon sheen
1	23.24	34.96	7.6	25	2/10/2016	1,040		3,690	0.024	<0.001	<0.001	<0.003	746	Hydrocarbon sheen Gray to clear Strong odor
1	23.01	34.96	7.8	25	5/9/2016	1,300		3,880	<0.001	<0.001	<0.001	<0.003	768	Hydrocarbon sheen Gray to clear Strong odor
1	23.66	34.96	7.3	25	9/8/2016	1,200		3,560	0.010	<0.001	0.001	0.012	830	Hydrocarbon sheen Gray to clear Strong odor
1	23.21	34.96	7.6	25	11/8/2016	1,240	1,195	3,620	0.023	0.004	0.003	0.030	819	Hydrocarbon sheen Gray to clear Strong odor
1	23.01	38.96	7.8	25	2/16/2017	1,240		3,690	0.001	<0.001	<0.001	<0.003	888	Hydrocarbon sheen Gray to clear Strong odor
1	22.74	38.96	7.9	25	4/28/2017	1,040		3,520	0.014	<0.001	0.002	<0.003	884	Hydrocarbon sheen Gray to clear Strong odor
1	23.41	38.96	7.9	25	9/5/2017	1,200		3,890	0.037	<0.001	0.007	<0.003	865	Hydrocarbon sheen Gray to clear Strong odor
1	23.38	38.96	7.9	25	11/8/2017	990	1,118	3,560	0.029	<0.001	0.005	<0.003	840	Hydrocarbon sheen Gray to clear Strong odor
1	22.84	34.96	7.9	25	2/23/2018	1,040		3,220	0.018	<0.001	0.003	<0.003	847	Hydrocarbon sheen Gray to clear Strong odor
1	23.02	34.96	7.8	25	5/8/2018	1,240		3,780	<0.001	<0.001	<0.001	<0.003	945	Hydrocarbon sheen Gray to clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	24.18	34.96	7	25	8/30/2018	1,020		3,400	0.036	<0.001	0.006	<0.003	804	Hydrocarbon sheen Gray to clear Strong odor
1	23.57	34.96	7.4	25	11/8/2018	980	1,070	3,060	0.032	0.001	0.005	<0.003	980	Hydrocarbon sheen Gray to clear Strong odor
1	23.09	38.96	7.7	25	2/27/2019	1,080		3,100	0.002	<0.001	<0.001	<0.003	1,000	Hydrocarbon sheen Gray to clear Strong odor
1	23.12	38.96	7.7	25	5/22/2019	990		3,430	0.019	<0.001	<0.001	<0.003	836	Hydrocarbon sheen Gray to clear Strong odor
1	24.02	38.96	7.1	25	8/26/2019	930		3,360	0.043	<0.001	0.006	<0.003	1,090	Hydrocarbon sheen Gray to clear Strong odor
1	23.32	38.96	7.6	25	11/13/2019	1,060	1,015	3,490	0.022	<0.001	0.004	<0.003	681	Hydrocarbon sheen Gray to clear Strong odor
1	23.21	34.96	7.6	25	3/2/2020	1,000		3,420	0.001	<0.001	<0.001	<0.003	1,500	Hydrocarbon sheen Gray to clear Strong odor
1	24.45	34.96	6.8	25	9/8/2020	960	980	3,330	0.030	<0.001	0.005	<0.003	489	Hydrocarbon sheen Gray to clear Strong odor
1	23.89	38.96	7.2	25	3/4/2021	1,040		3,400	0.001	<0.001	<0.001	<0.003	744	Hydrocarbon sheen Gray to clear Strong odor
1	23.93	38.96	7.2	25	6/8/2021	920		3,300	0.030	0.002	0.006	<0.003	612	Hydrocarbon sheen Gray to clear Strong odor
1	24.35	38.96	6.9	25	9/7/2021	1,100		3,460	<0.001	0.003	<0.001	<0.003	939	Hydrocarbon sheen Gray to clear Strong odor
1	23.91	38.96	7.2	25	11/4/2021	1,050	1,028	3,410	0.005	<0.001	<0.001	<0.003	920	Hydrocarbon sheen Gray to clear Strong odor
1	24.12	38.96	7	25	2/24/2022	1,100		3,300	0.001	<0.001	<0.001	<0.003	770	Hydrocarbon sheen Gray to clear Strong odor
1	24.56	38.96	6.8	25	6/3/2022	1,160		3,360	0.020	<0.001	0.002	<0.003	738	Hydrocarbon sheen Gray to clear Strong odor
1	24.9	38.96	6.5	25	8/30/2022	1,000		3,470	<0.001	<0.001	<0.001	<0.003	800	Hydrocarbon sheen Gray to clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	24.55	38.96	6.8	25	11/10/2022	950	1,053	3,460	<0.001	<0.001	<0.001	<0.003	843	Hydrocarbon sheen Gray to clear Strong odor
1	24.01	34.96	7.1	25	3/13/2023	1,040		3,450	<0.001	<0.001	<0.001	<0.003	788	Hydrocarbon sheen Gray to clear Strong odor
1	23.93	34.96	7.2	25	6/1/2023	1,080		3,440	0.005	<0.001	<0.001	<0.003	939	Hydrocarbon sheen Gray to clear Strong odor
1	23.9	34.96	7.2	25	8/15/2023	1,440	1,187	3,720	<0.001	<0.001	<0.001	<0.003	742	Hydrocarbon sheen Gray to clear Strong odor
1	24.41	34.96	6.9	25	12/1/2023	4,050	1,903	6,830	0.015	<0.001	0.001	<0.003	159	Hydrocarbon sheen Gray to clear Strong odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	23.94	33.4	1.5	5	1/18/2008	980		3,205	<0.001	<0.001	<0.001	<0.003	746	Clear Slight odor
2	23.8	33.4	1.5	5	4/9/2008	840		2,990	<0.001	<0.001	<0.001	<0.003	988	Clear Slight odor
2	24.6	33.4	1.4	5	7/21/2008	1,000		3,210	<0.002	<0.002	<0.002	<0.006	796	Clear Slight odor
2	24.29	33.4	1.5	5	10/20/2008	1,010	958	3,270	<0.001	<0.001	<0.001	<0.003	762	Clear Slight odor
2	23.99	33.48	1.5	5	2/5/2009	1,080		3,510	<0.001	<0.001	<0.001	<0.003	815	Clear Slight odor
2	23.87	33.48	1.5	5	5/8/2009	1,120		3,480	<0.001	<0.001	<0.001	<0.003	772	Clear Slight odor
2	24.83	33.48	1.4	5	8/14/2009	1,140		3,550	<0.001	<0.001	<0.001	<0.003	750	Clear Slight odor
2	24.97	33.48	1.4	5	11/4/2009	1,200	1,135	3,570	<0.001	<0.001	<0.001	<0.003	564	Clear Slight odor
2	24.49	33.48	1.4	5	2/17/2010	1,080		3,480	<0.001	<0.001	<0.001	<0.003	929	Clear Slight odor
2	24.09	33.48	1.5	5	5/19/2010	1,180		3,670	<0.001	<0.001	<0.001	<0.003	841	Clear Slight odor
2	23.85	33.48	1.5	5	8/11/2010	1,120		3,520	<0.001	<0.001	<0.001	<0.003	783	Clear Slight odor
2	24.15	33.48	1.5	5	11/4/2010	1,340	1,180	4,210	<0.001	<0.001	<0.001	<0.003	1020	Clear Slight odor
2	23.92	33.49	1.5	6	2/25/2011	1,680		3,390	<0.001	<0.001	<0.001	<0.003	761	Clear Slight odor
2	24.06	33.49	1.5	6	5/20/2011	1,120		3,360	<0.001	<0.001	<0.001	<0.003	724	Clear Slight odor
2	24.88	33.49	1.4	6	8/11/2011	1,140		3,470	<0.001	<0.001	<0.001	<0.003	845	Clear Slight odor
2	24.44	33.49	1.4	6	11/9/2011	1,280	1,305	3,680	<0.001	<0.001	<0.001	<0.003	788	Clear Slight odor
2	24.49	33.49	1.4	6	2/8/2012	1,060		3,290	<0.001	<0.001	<0.001	<0.003	702	Clear Slight odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	24.31	33.49	1.5	6	5/20/2012	1,040		3,270	<0.001	<0.001	<0.001	<0.003	695	Clear Slight odor
2	24.88	33.49	1.4	6	8/7/2012	1,020		3,230	<0.001	<0.001	<0.001	<0.003	749	Clear Slight odor
2	24.81	33.49	1.4	6	10/31/2012	1,060	1,045	3,300	<0.001	<0.001	<0.001	<0.003	692	Clear Slight odor
2	24.53	33.49	1.4	6	1/30/2013	1,040		3,220	<0.001	<0.001	<0.001	<0.003	626	Clear Slight odor
2	24.34	33.49	1.5	6	5/15/2013	960		3,230	<0.001	<0.001	<0.001	<0.003	874	Clear Slight odor
2	24.83	33.49	1.4	6	8/14/2013	860		3,010	<0.001	<0.001	<0.001	<0.003	668	Clear Slight odor
2	24.93	33.49	1.4	6	10/31/2013	770	908	2,900	<0.001	<0.001	<0.001	<0.003	670	Clear Slight odor
2	24.54	33.49	1.4	6	2/18/2014	740		2,710	<0.001	<0.001	<0.001	<0.003	664	Clear Slight odor
2	24.39	33.49	1.5	6	4/24/2014	830		2,890	<0.001	<0.001	<0.001	<0.003	638	Clear Slight odor
2	25.28	33.49	1.3	6	7/31/2014	730		2,720	<0.001	<0.001	<0.001	<0.003	646	Clear Slight odor
2	24.53	33.49	1.4	6	11/6/2014	820	780	2,910	<0.001	<0.001	<0.001	<0.003	539	Clear Slight odor
2	24.29	33.49	1.5	6	2/12/2015	950		3,010	<0.001	<0.001	<0.001	<0.003	703	Clear Slight odor
2	23.98	33.49	1.5	6	5/6/2015	860		3,070	<0.001	<0.001	<0.001	<0.003	605	Clear Slight odor
2	24.58	33.49	1.4	6	8/11/2015	939		3,250	<0.001	<0.001	<0.001	<0.003	479	Clear Slight odor
2	24.33	33.49	1.47	6	11/5/2015	980	932	3,490	<0.001	<0.001	<0.001	<0.003	691	Clear Slight odor
2	23.96	33.49	1.5	6	2/10/2016	1,160		3,800	<0.001	<0.001	<0.001	<0.003	720	Clear Slight odor
2	23.79	33.49	1.6	6	5/9/2016	1,160		3,670	<0.001	<0.001	<0.001	<0.003	892	Clear Slight odor
2	24.37	33.49	1.5	6	9/8/2016	1,160		3,700	<0.001	<0.001	<0.001	<0.003	826	Clear Slight odor
2	23.93	33.49	1.5	6	11/8/2016	960	1,110	3,080	<0.001	<0.001	<0.001	<0.003	716	Clear Slight odor
2	23.67	33.49	1.6	6	2/16/2017	920		2,900	<0.001	<0.001	<0.001	<0.003	771	Clear Slight odor
2	23.47	33.49	1.6	6	4/28/2017	900		2,980	<0.001	<0.001	<0.001	<0.003	802	Clear Slight odor
2	24.06	33.49	1.6	6	9/5/2017	920		3,110	<0.001	<0.001	<0.001	<0.003	713	Clear Slight odor
2	24.01	33.49	1.6	6	11/8/2017	830	893	3,030	0.002	<0.001	<0.001	<0.003	705	Clear Slight odor
2	23.53	33.49	1.6	6	2/23/2018	1,070		3,110	<0.001	<0.001	<0.001	<0.003	776	Clear Slight odor
2	23.59	33.49	1.6	6	5/8/2018	1,240		3,780	<0.001	<0.001	<0.001	<0.003	945	Clear Slight odor
2	24.73	33.49	1.4	6	8/30/2018	1,080		3,370	<0.001	<0.001	<0.001	<0.003	838	Clear Slight odor
2	24.19	33.49	1.5	6	11/8/2018	980	1,093	2,240	<0.001	<0.001	<0.001	<0.003	926	Clear Slight odor
2	23.78	33.49	1.6	6	2/27/2019	950		2,700	<0.001	<0.001	<0.001	<0.003	871	Clear Slight odor
2	23.74	33.49	1.6	6	5/22/2019	1,000		3,220	<0.001	<0.001	<0.001	<0.003	800	Clear Slight odor
2	24.78	33.49	1.4	6	8/26/2019	870		2,850	<0.001	<0.001	<0.001	<0.003	1,170	Clear Slight odor
2	24.44	33.49	1.4	6	11/13/2019	830	913	2,920	<0.001	<0.001	<0.001	<0.003	670	Clear Slight odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	23.88	33.49	1.5	6	3/2/2020	800		2,840	<0.001	<0.001	<0.001	<0.003	885	Clear Slight odor
2	24.98	33.49	1.4	6	9/8/2020	800	800	2,830	<0.001	<0.001	<0.001	<0.003	545	Clear Slight odor
2	24.53	33.49	1.4	6	3/4/2021	900		2,830	<0.001	<0.001	<0.001	<0.003	730	Clear Slight odor
2	24.56	33.49	1.4	6	6/8/2021	1,000		3,010	<0.001	<0.001	<0.001	<0.003	636	Clear Slight odor
2	25.02	33.49	1.4	6	9/7/2021	1,000		3,080	<0.001	<0.001	<0.001	<0.003	881	Clear Slight odor
2	24.53	33.49	1.4	6	11/4/2021	950	963	3,020	<0.001	<0.001	<0.001	<0.003	843	Clear Slight odor
2	24.77	33.49	1.4	6	2/24/2022	1,040		3,070	<0.001	<0.001	<0.001	<0.003	728	Clear Slight odor
2	25.18	33.49	1.3	6	6/3/2022	1,120		3,020	<0.001	<0.001	<0.001	<0.003	872	Clear Slight odor
2	24.2	33.49	1.5	6	8/30/2022	840		2,730	<0.001	<0.001	<0.001	<0.003	572	Clear Slight odor
2	25.18	33.49	1.3	6	11/10/2022	640	910	2,590	<0.001	<0.001	<0.001	<0.003	628	Clear Slight odor
2	24.7	33.49	1.4	6	3/13/2023	880		2,720	<0.001	<0.001	<0.001	<0.003	546	Clear Slight odor
2	24.57	33.49	1.4	6	6/1/2023	790		2,750	<0.001	<0.001	<0.001	<0.003	706	Clear Slight odor
2	24.55	33.49	1.4	6	8/15/2023	880		2,510	<0.001	<0.001	<0.001	<0.003	502	Clear Slight odor
2	15.06	33.49	2.9	6	12/1/2023	580	783	1,260	<0.001	<0.001	<0.001	<0.003	128	Clear Slight odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	23.38	33.75	1.7	5	1/18/2008	1,420		4,175	0.002	<0.001	0.002	<0.003	670	RISER HAS BEEN HIT Clear Strong odor
3	23.8	33.75	1.6	5	4/9/2008	1,220		3,720	0.002	<0.001	0.002	<0.003	1070	Clear Strong odor RISER HAS BEEN REPLACED
3	24.14	33.75	1.5	5	7/21/2008	2,140		5,570	<0.002	<0.002	<0.002	<0.006	978	Clear Strong odor
3	23.74	33.75	1.6	6	10/20/2008	1,940	1,680	5,170	0.001	<0.001	<0.001	<0.003	890	Clear Strong odor
3	23.4	33.74	1.7	6	2/5/2009	1,480		4,330	<0.001	<0.001	<0.001	<0.003	837	Clear Strong odor
3	23.31	33.74	1.7	6	5/8/2009	1,840		4,800	<0.001	<0.001	<0.001	<0.003	802	Clear Strong odor
3	24.39	33.74	1.5	6	8/14/2009	2,570		6,580	0.002	0.001	<0.001	<0.003	1060	Clear Strong odor
3	24.52	33.74	1.5	6	11/4/2009	2,050	1,985	4,890	0.004	<0.001	<0.001	<0.003	804	Clear Strong odor
3	23.95	33.75	1.6	6	2/17/2010	1,420		4,200	0.005	<0.001	<0.001	<0.003	1050	Clear Strong odor
3	23.52	33.75	1.6	6	5/19/2010	1,640		4,680	0.005	<0.001	<0.001	<0.003	974	Clear Strong odor

ROC - EME H-20 SWD (1R427-87)
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MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	23.36	33.75	1.7	6	8/11/2010	2,150		5,430	0.002	<0.001	<0.001	<0.003	962	Hydrocarbon sheen Clear Strong odor
3	23.77	33.75	1.6	6	11/4/2010	2,150	1,840	5,760	0.003	<0.001	<0.001	<0.003	1190	Hydrocarbon sheen Clear Strong odor
3	23.39	33.75	1.7	6	2/25/2011	1,580		4,540	0.002	<0.001	<0.001	<0.003	933	Hydrocarbon sheen Clear Strong odor
3	23.72	33.75	1.6	6	5/20/2011	1,880		5,050	0.002	<0.001	<0.001	<0.003	967	Hydrocarbon sheen Clear Strong odor
3	24.62	33.75	1.5	6	8/11/2011	1,580		4,880	<0.001	<0.001	<0.001	<0.003	870	Hydrocarbon sheen Clear Strong odor
3	24.38	33.75	1.5	6	11/9/2011	1,660	1,675	4,550	0.001	<0.001	0.002	<0.003	904	Hydrocarbon sheen Clear Strong odor
3	23.98	33.75	1.6	6	2/8/2012	1,480		4,090	0.003	<0.001	<0.001	<0.003	835	Hydrocarbon sheen Clear Strong odor
3	23.82	33.75	1.6	6	5/20/2012	1,400		3,890	0.001	<0.001	<0.001	<0.003	740	Hydrocarbon sheen Clear Strong odor
3	24.48	33.75	1.5	6	8/7/2012	1,920		5,120	0.002	0.003	0.002	<0.003	833	Hydrocarbon sheen Clear Strong odor
3	24.28	33.75	1.5	6	10/31/2012	1,840	1,660	4,830	<0.001	<0.001	<0.001	<0.003	913	Hydrocarbon sheen Clear Strong odor
3	24.03	33.75	1.6	6	1/30/2013	1,240		3,850	<0.001	<0.001	<0.001	<0.003	803	Hydrocarbon sheen Clear Strong odor
3	23.81	33.75	1.6	6	5/14/2013	1,250		3,720	<0.001	<0.001	<0.001	<0.003	885	Hydrocarbon sheen Clear Strong odor
3	24.41	33.75	1.5	6	8/14/2013	1,580		4,720	<0.001	0.001	<0.001	<0.003	976	Hydrocarbon sheen Clear Strong odor
3	24.43	33.75	1.5	6	10/31/2013	1,080	1,288	3,540	<0.001	<0.001	<0.001	<0.003	771	Hydrocarbon sheen Clear Strong odor
3	24.04	33.75	1.6	6	2/18/2014	1,040		3,440	<0.001	<0.001	<0.001	<0.003	808	Hydrocarbon sheen Clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	23.81	33.75	1.6	6	4/24/2014	1,020		3,560	<0.001	<0.001	<0.001	<0.003	735	Hydrocarbon sheen Clear Strong odor
3	24.93	33.75	1.4	6	7/31/2014	1,080		3,750	<0.001	<0.001	<0.001	<0.003	852	Hydrocarbon sheen Clear Strong odor
3	23.93	33.75	1.6	6	11/6/2014	1,780	1,230	4,910	<0.001	<0.001	<0.001	<0.003	889	Hydrocarbon sheen Gray to clear Strong odor
3	23.73	33.75	1.6	6	2/12/2015	1,520		4,830	<0.001	<0.001	<0.001	<0.003	1,120	Hydrocarbon sheen Clear Strong odor
3	23.42	33.75	1.7	6	5/6/2015	1,260		3,900	<0.001	<0.001	<0.001	<0.003	939	Hydrocarbon sheen Clear Strong odor
3	24.19	33.75	1.5	6	8/11/2015	1,660		5,050	<0.001	<0.001	<0.001	<0.003	651	Hydrocarbon sheen Clear Strong odor
3	23.94	33.75	1.5	6	11/5/2015	1,520	1,490	5,110	<0.001	<0.001	<0.001	<0.003	915	Hydrocarbon sheen Clear Strong odor
3	23.58	33.75	1.6	6	2/10/2016	1,280		3,980	<0.001	<0.001	<0.001	<0.003	768	Hydrocarbon sheen Clear Strong odor
3	23.22	33.75	1.7	6	5/9/2016	1,380		3,910	<0.001	<0.001	<0.001	<0.003	829	Hydrocarbon sheen Clear Strong odor
3	23.74	33.75	1.6	6	9/8/2016	1,060		3,680	0.006	<0.001	<0.001	<0.003	829	Hydrocarbon sheen Clear Strong odor
3	23.29	33.75	1.7	6	11/8/2016	1,140	1,215	3,350	0.026	<0.001	0.005	0.003	808	Hydrocarbon sheen Clear Strong odor
3	23.03	33.75	1.7	6	2/16/2017	1,140		3,670	0.001	<0.001	<0.001	<0.003	928	Hydrocarbon sheen Clear Strong odor
3	22.77	33.75	1.8	6	4/28/2017	1,108		3,680	0.023	<0.001	0.003	<0.003	999	Hydrocarbon sheen Clear Strong odor
3	23.57	33.75	1.8	6	9/5/2017	1,060		3,230	0.041	<0.001	0.006	<0.003	707	Hydrocarbon sheen Clear Strong odor
3	23.53	33.75	1.8	6	11/8/2017	1,030	1,085	3,770	0.015	<0.001	0.002	<0.003	856	Hydrocarbon sheen Clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	22.95	33.75	1.7	6	2/23/2018	990		3,290	0.018	<0.001	0.002	<0.003	948	Hydrocarbon sheen Clear Strong odor
3	23.09	33.75	1.7	6	5/8/2018	1,340		3,580	<0.001	<0.001	0.002	<0.003	999	Hydrocarbon sheen Clear Strong odor
3	24.42	33.75	1.5	6	8/30/2018	1,080		3,560	0.034	<0.001	0.006	<0.003	806	Hydrocarbon sheen Clear Strong odor
3	23.93	33.75	1.6	6	11/8/2018	1,100	1,128	3,340	0.035	<0.001	0.002	<0.003	1,370	Hydrocarbon sheen Clear Strong odor
3	23.19	33.75	1.7	6	2/27/2019	1,200		3,300	0.007	<0.001	<0.001	<0.003	1,080	Hydrocarbon sheen Clear Strong odor
3	23.2	33.75	1.7	6	5/22/2019	1,090		3,670	0.006	<0.001	<0.001	<0.003	920	Hydrocarbon sheen Clear Strong odor
3	24.24	33.75	1.5	6	8/26/2019	1,040		3,460	0.068	0.002	0.003	<0.003	1,150	Hydrocarbon sheen Clear Strong odor
3	23.97	33.75	1.6	6	11/13/2019	1,040	1,093	3,540	0.017	<0.001	0.003	<0.003	724	Hydrocarbon sheen Clear Strong odor
3	23.31	33.75	1.7	6	3/2/2020	1,060		3,420	0.002	<0.001	0.003	<0.003	1,580	Hydrocarbon sheen Clear Strong odor
3	24.61	33.75	1.5	6	9/8/2020	980	1,020	3,340	0.058	<0.001	0.012	<0.003	582	Hydrocarbon sheen Clear Strong odor
3	24.16	33.75	1.5	6	3/4/2021	1,080		3,380	0.001	<0.001	<0.001	<0.003	860	Hydrocarbon sheen Clear Strong odor
3	24.2	33.75	1.5	6	6/8/2021	960		3,500	0.013	<0.001	0.002	<0.003	738	Hydrocarbon sheen Clear Strong odor
3	24.55	33.75	1.5	6	9/7/2021	1,060		3,460	0.002	0.002	<0.001	<0.003	996	Hydrocarbon sheen Clear Strong odor
3	24.18	33.75	1.5	6	11/4/2021	950	1,013	3,350	<0.001	<0.001	<0.001	<0.003	930	Hydrocarbon sheen Clear Strong odor
3	24.55	33.75	1.5	6	2/24/2022	1,120		3,400	0.001	<0.001	<0.001	<0.003	783	Hydrocarbon sheen Clear Strong odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	24.8	33.75	1.4	6	6/3/2022	1,120		3,280	0.013	<0.001	0.002	<0.003	949	Hydrocarbon sheen Clear Strong odor
3	25.29	33.75	1.4	6	8/30/2022	1,090		3,480	<0.001	<0.001	<0.001	<0.003	730	Hydrocarbon sheen Clear Strong odor
3	24.72	33.75	1.4	6	11/10/2022	840	1,043	3,370	<0.001	<0.001	<0.001	<0.003	802	Hydrocarbon sheen Clear Strong odor
3	24.18	33.75	1.5	6	3/13/2023	1,100		3,380	0.003	<0.001	<0.001	<0.003	849	Hydrocarbon sheen Clear Strong odor
3	24.06	33.75	1.6	6	6/1/2023	1,000		3,240	0.005	<0.001	<0.001	<0.003	797	Hydrocarbon sheen Clear Strong odor
3	24.03	33.75	1.6	6	8/15/2023	900		2,850	<0.001	<0.001	<0.001	<0.003	752	Hydrocarbon sheen Clear Strong odor
3	24.58	33.75	1.5	6	12/1/2023	1,020	1,005	3,360	0.002	<0.001	<0.001	<0.003	874	Hydrocarbon sheen Clear Strong odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
4	22.39	33.92	1.8	6	10/20/2008	1,120	1,120	3,700	<0.001	<0.001	<0.001	<0.003	812	Clear Slight odor
4	22.08	34.33	2	6	2/5/2009	1,200		3,640	<0.001	<0.001	<0.001	<0.003	746	Clear Slight odor
4	22	34.33	2	8	5/8/2009	1,340		3,720	<0.001	<0.001	<0.001	<0.003	694	Clear Slight odor
4	23.12	34.33	1.8	8	8/14/2009	1,240		3,770	<0.001	<0.001	<0.001	<0.003	648	Clear Slight odor
4	23.19	34.33	1.8	8	11/4/2009	1,200	1,245	3,710	0.001	<0.001	0.004	<0.003	555	Clear Slight odor
4	22.62	34.34	1.9	8	2/17/2010	1,380		3,920	<0.001	<0.001	<0.001	<0.003	825	Clear Slight odor
4	22.22	34.34	1.9	8	5/19/2010	1,340		3,750	<0.001	<0.001	<0.001	<0.003	760	Clear Slight odor
4	22.04	34.34	2	8	8/11/2010	1,380		3,870	<0.001	<0.001	<0.001	<0.003	692	Clear Slight odor
4	22.49	34.34	1.9	8	11/4/2010	1,280	1,345	3,610	0.001	<0.001	<0.001	<0.003	698	Clear Slight odor
4	22.09	34.36	2	8	2/25/2011	1,440		4,160	<0.001	<0.001	<0.001	<0.003	800	Clear No odor
4	22.43	34.36	1.9	8	5/20/2011	1,500		4,000	<0.001	<0.001	<0.001	<0.003	781	Clear Slight odor
4	23.38	34.36	1.8	8	8/11/2011	1,400		4,080	0.004	<0.001	<0.001	<0.003	544	Clear Slight odor
4	23.08	34.36	1.8	8	11/9/2011	1,480	1,455	4,030	0.002	<0.001	<0.001	<0.003	771	Clear Slight odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
4	22.65	34.36	1.9	8	2/8/2012	1,500		4,150	0.002	<0.001	<0.001	<0.003	808	Clear Slight odor
4	22.49	34.36	1.9	8	5/20/2012	1,360		3,990	<0.001	<0.001	<0.001	<0.003	910	Clear Slight odor
4	23.23	34.36	1.8	8	8/7/2012	1,360		3,960	0.001	<0.001	<0.001	<0.003	792	Clear Slight odor
4	22.96	34.36	1.8	8	10/31/2012	1,400	1,405	4,090	<0.001	<0.001	<0.001	<0.003	773	Clear Slight odor
4	22.68	34.36	1.9	8	1/30/2013	1,220		4,000	<0.001	<0.001	<0.001	<0.003	638	Clear Slight odor
4	22.49	34.36	1.9	8	5/14/2013	1,340		4,060	<0.001	<0.001	<0.001	<0.003	854	Clear Slight odor
4	23.13	34.36	1.8	8	8/14/2013	1,400		4,060	<0.001	<0.001	<0.001	<0.003	878	Clear Slight odor
4	23.12	34.36	1.8	8	10/31/2013	1,180	1,285	3,730	<0.001	<0.001	<0.001	<0.003	780	Clear Slight odor
4	22.73	34.36	1.9	8	2/18/2014	1,200		3,510	<0.001	<0.001	<0.001	<0.003	765	Clear Slight odor
4	22.59	34.36	1.9	8	4/24/2014	1,240		3,630	<0.001	<0.001	<0.001	<0.003	593	Clear Slight odor
4	23.68	34.36	1.7	8	7/31/2014	1,220		3,740	<0.001	<0.001	<0.001	<0.003	758	Clear Slight odor
4	22.62	34.36	1.9	8	11/6/2014	920	1,145	3,410	<0.001	<0.001	<0.001	<0.003	501	Clear Slight odor
4	22.38	34.36	1.9	8	2/12/2015	1,080		3,520	<0.001	<0.001	<0.001	<0.003	784	Clear Slight odor
4	22.15	34.36	2	8	5/6/2015	1,040		3,420	<0.001	<0.001	<0.001	<0.003	719	Clear Slight odor
4	22.98	34.36	1.8	8	8/11/2015	1,120		3,930	<0.001	<0.001	<0.001	<0.003	580	Clear Slight odor
4	22.72	34.36	1.8	8	11/5/2015	1,140	1,095	3,640	<0.001	<0.001	<0.001	<0.003	782	Clear Slight odor
4	22.21	34.36	1.9	8	2/10/2016	1,080		3,520	<0.001	<0.001	<0.001	<0.003	703	Clear Slight odor
4	21.94	34.36	2.0	8	5/9/2016	1,140		3,460	<0.001	<0.001	<0.001	<0.003	797	Clear Slight odor
4	22.42	34.36	1.9	8	9/8/2016	1,260		3,800	<0.001	<0.001	<0.001	<0.003	693	Clear Slight odor
4	21.98	34.36	2.0	8	11/8/2016	1,320	1,200	3,610	0.001	<0.001	<0.001	<0.003	732	Clear Slight odor
4	21.81	34.36	2	8	2/16/2017	1,160		3,680	<0.001	<0.001	<0.001	<0.003	960	Clear Slight odor
4	21.58	34.36	2	8	4/28/2017	1,200		3,780	<0.001	<0.001	<0.001	<0.003	856	Clear Slight odor
4	22.29	34.36	2	8	9/5/2017	1,340		4,040	<0.001	<0.001	<0.001	<0.003	798	Clear Slight odor
4	22.26	34.36	2	8	11/8/2017	1,360	1,265	3,930	0.003	<0.001	<0.001	<0.003	903	Clear Slight odor
4	21.66	34.36	2	8	2/23/2018	1,170		3,470	<0.001	<0.001	<0.001	<0.003	863	Clear Slight odor
4	21.8	34.36	2	8	5/8/2018	1,500		3,730	<0.001	<0.001	<0.001	<0.003	892	Clear Slight odor
4	23.15	34.36	1.8	8	8/30/2018	1,460		4,030	<0.001	<0.001	<0.001	<0.003	956	Clear Slight odor
4	22.35	34.36	1.9	8	11/8/2018	1,240	1,343	2,800	<0.001	<0.001	<0.001	<0.003	968	Clear Slight odor
4	21.91	34.36	2	8	2/27/2019	1,400		3,790	<0.001	<0.001	<0.001	<0.003	1,080	Clear Slight odor
4	21.97	34.36	2	8	5/22/2019	1,230		3,650	<0.001	<0.001	<0.001	<0.003	908	Clear Slight odor
4	23.22	34.36	1.8	8	8/26/2019	1,240		3,970	<0.001	<0.001	<0.001	<0.003	742	Clear Slight odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
4	22.65	34.36	1.9	8	11/13/2019	1,320	1,298	3,910	<0.001	<0.001	<0.001	<0.003	756	Clear Slight odor
4	22.01	34.36	2	8	3/2/2020	1,220		3,850	<0.001	0.001	<0.001	<0.003	1,940	Clear Slight odor
4	23.93	34.36	1.7	8	9/8/2020	1,220	1,220	3,660	0.001	<0.001	<0.001	<0.003	709	Clear Slight odor
4	22.68	34.36	1.9	8	3/4/2021	1,180		3,640	0.002	<0.001	<0.001	<0.003	804	Clear Slight odor
4	22.71	34.36	1.9	8	6/8/2021	1,100		3,660	<0.001	<0.001	<0.001	<0.003	737	Clear Slight odor
4	23.2	34.36	1.8	8	9/7/2021	1,280		3,700	0.002	0.001	<0.001	<0.003	953	Clear Slight odor
4	22.69	34.36	1.9	8	11/4/2021	1,150	1,178	3,640	0.001	<0.001	<0.001	<0.003	913	Clear Slight odor
4	22.94	34.36	1.8	8	2/24/2022	1,220		3,560	<0.001	<0.001	<0.001	<0.003	736	Clear Slight odor
4	23.5	34.36	1.7	8	6/3/2022	1,220		3,520	<0.001	<0.001	<0.001	<0.003	963	Clear Slight odor
4	24.03	34.36	1.7	8	8/30/2022	1,240		3,440	<0.001	<0.001	<0.001	<0.003	777	Clear Slight odor
4	23.39	34.36	1.8	8	11/10/2022	1,110	1,198	3,380	<0.001	<0.001	<0.001	<0.003	762	Clear Slight odor
4	22.85	34.36	1.8	8	3/13/2023	1,280		3,450	<0.001	<0.001	<0.001	<0.003	662	Clear Slight odor
4	22.71	34.36	1.9	8	6/1/2023	1,090		3,550	<0.001	<0.001	<0.001	<0.003	814	Clear Slight odor
4	22.68	34.36	1.9	8	8/15/2023	1,050		3,350	<0.001	<0.001	<0.001	<0.003	814	Clear Slight odor
4	23.24	34.36	1.8	8	12/1/2023	1,000	1,105	3,340	<0.001	<0.001	<0.001	<0.003	771	Clear Slight odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
5	23.06	37.6	2.3	8	10/20/2008	1,220	1,220	4,060	<0.001	<0.001	<0.001	<0.003	894	Clear Slight odor
5	22.71	37.62	2.4	8	2/5/2009	1,180		3,940	<0.001	<0.001	<0.001	<0.003	902	Clear Slight odor
5	22.61	37.62	2.4	8	5/8/2009	1,320		3,840	<0.001	<0.001	<0.001	<0.003	858	Clear Slight odor
5	23.66	37.62	2.2	8	8/14/2009	1,240		3,740	<0.001	<0.001	<0.001	<0.003	730	Clear Slight odor
5	23.82	37.62	2.2	8	11/4/2009	1,260	1,250	3,640	<0.001	<0.001	<0.001	<0.003	600	Clear Slight odor
5	23.38	37.65	2.3	8	2/17/2010	1,260		3,800	<0.001	<0.001	<0.001	<0.003	940	Clear Slight odor
5	22.84	37.65	2.4	8	5/19/2010	1,340		3,660	<0.001	<0.001	<0.001	<0.003	783	Clear Slight odor
5	22.64	37.65	2.4	8	8/11/2010	1,400		3,690	<0.001	<0.001	<0.001	<0.003	785	Clear Slight odor
5	23.05	37.65	2.3	8	11/4/2010	1,560	1,390	4,210	0.082	0.002	0.004	<0.006	881	Clear Slight odor
5	22.71	37.65	2.4	8	2/25/2011	1,600		4,390	<0.001	<0.001	<0.001	<0.003	829	Clear No odor
5	22.97	37.65	2.3	8	5/20/2011	1,680		4,380	<0.001	<0.001	<0.001	<0.003	877	Clear Slight odor
5	23.91	37.65	2.2	8	8/11/2011	1,600		4,420	<0.001	<0.001	<0.001	<0.003	799	Clear Slight odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
5	23.88	37.65	2.2	8	11/9/2011	1,600	1,620	4,460	<0.001	<0.001	<0.001	<0.003	974	Clear Slight odor
5	23.31	37.65	2.3	8	2/8/2012	1,560		4,430	<0.001	<0.001	<0.001	<0.003	973	Clear Slight odor
5	23.12	37.65	2.3	8	5/20/2012	1,480		4,190	<0.001	<0.001	<0.001	<0.003	1,030	Clear Slight odor
5	23.87	37.65	2.2	8	8/7/2012	1,320		3,840	<0.001	<0.001	0.001	<0.003	935	Clear Slight odor
5	23.65	37.65	2.2	8	10/31/2012	1,240	1,400	3,820	<0.001	<0.001	<0.001	<0.003	750	Clear Slight odor
5	23.33	37.65	2.3	8	1/30/2013	1,140		3,730	<0.001	<0.001	<0.001	<0.003	686	Clear Slight odor
5	23.11	37.65	2.3	8	5/14/2013	1,200		3,850	<0.001	<0.001	<0.001	<0.003	961	Clear Slight odor
5	23.68	37.65	2.2	8	8/14/2013	1,070		3,600	<0.001	<0.001	<0.001	<0.003	802	Clear Slight odor
5	23.77	37.65	2.2	8	10/31/2013	1,000	1,103	3,460	<0.001	<0.001	<0.001	<0.003	750	Clear Slight odor
5	23.35	37.65	2.3	8	2/18/2014	1,000		3,540	<0.001	<0.001	<0.001	<0.003	850	Clear Slight odor
5	23.22	37.65	2.3	8	4/24/2014	1,060		3,690	<0.001	<0.001	<0.001	<0.003	860	Clear Slight odor
5	24.27	37.65	2.1	8	7/31/2014	1,040		3,520	<0.001	<0.001	<0.001	<0.003	955	Clear Slight odor
5	23.26	37.65	2.3	8	11/6/2014	1,100	1,050	3,500	<0.001	<0.001	<0.001	<0.003	549	Clear Slight odor
5	23	37.65	2.3	8	2/12/2015	1,040		3,760	<0.001	<0.001	<0.001	<0.003	869	Clear Slight odor
5	22.67	37.65	2.4	8	5/6/2015	1,200		4,090	<0.001	<0.001	<0.001	<0.003	977	Clear Slight odor
5	23.45	37.65	2.3	8	8/11/2015	1,220		4,350	<0.001	<0.001	<0.001	<0.003	1,270	Clear Slight odor
5	23.18	37.65	2.3	8	11/5/2015	1,360	1,205	4,060	<0.001	<0.001	<0.001	<0.003	353	Clear Slight odor
5	22.74	37.65	2.3	8	2/10/2016	1,240		4,160	<0.001	<0.001	<0.001	<0.003	1,060	Clear Slight odor
5	22.52	37.65	2.4	8	5/9/2016	1,080		3,860	<0.001	<0.001	<0.001	<0.003	979	Clear Slight odor
5	23.13	37.65	2.3	8	9/8/2016	1,120		3,790	<0.001	<0.001	<0.001	<0.003	905	Clear Slight odor
5	22.62	37.65	2.4	8	11/8/2016	1,300	1,185	4,010	<0.001	<0.001	<0.001	<0.003	1,020	Clear Slight odor
5	22.38	37.65	2.4	8	2/16/2017	1,180		3,710	<0.001	<0.001	<0.001	<0.003	975	Clear Slight odor
5	22.18	37.65	2.5	8	4/28/2017	1,180		3,760	<0.001	<0.001	<0.001	<0.003	1,050	Clear Slight odor
5	22.88	37.65	2.5	8	9/5/2017	1,160		3,940	<0.001	<0.001	<0.001	<0.003	941	Clear Slight odor
5	22.82	37.65	2.5	8	11/8/2017	1,060	1,145	3,570	<0.001	<0.001	<0.001	<0.003	926	Clear Slight odor
5	22.28	37.65	2.5	8	2/23/2018	1,060		3,690	<0.001	<0.001	<0.001	<0.003	974	Clear Slight odor
5	22.35	37.65	2.4	8	5/8/2018	1,230		3,890	<0.001	<0.001	<0.001	<0.003	1,120	Clear Slight odor
5	23.71	37.65	2.2	8	8/30/2018	1,140		3,500	<0.001	<0.001	<0.001	<0.003	958	Clear Slight odor
5	23.02	37.65	2.3	8	11/8/2018	1,140	1,143	3,290	<0.001	<0.001	<0.001	<0.003	992	Clear Slight odor
5	22.54	34.65	2.4	8	2/27/2019	1,280		3,450	<0.001	<0.001	<0.001	<0.003	1,230	Clear Slight odor
5	22.57	34.65	2.4	8	5/22/2019	1,280		4,110	<0.001	<0.001	<0.001	<0.003	1,060	Clear Slight odor

ROC - EME H-20 SWD (1R427-87)
Unit Letter H, Section 20, T20S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	ann. avg Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
5	23.74	34.65	2.2	8	8/26/2019	1,100		3,610	<0.001	<0.001	<0.001	<0.003	806	Clear Slight odor
5	23.32	34.65	2.3	8	11/13/2019	1,040	1,175	3,420	<0.001	<0.001	<0.001	<0.003	792	Clear Slight odor
5	22.65	37.65	2.4	8	3/2/2020	1,090		3,530	<0.001	0.002	<0.001	<0.003	1,800	Clear Slight odor
5	23.37	37.65	2.3	8	9/8/2020	980	1,035	3,350	<0.001	<0.001	<0.001	<0.003	629	Clear Slight odor
5	23.33	37.65	2.3	8	3/4/2021	1,040		3,350	<0.001	<0.001	<0.001	<0.003	715	Clear Slight odor
5	22.37	37.65	2.3	8	6/8/2021	960		3,540	<0.001	<0.001	<0.001	<0.003	758	Clear Slight odor
5	23.88	37.65	2.2	8	9/7/2021	590		3,360	<0.001	<0.001	<0.001	<0.003	860	Clear Slight odor
5	22.35	37.65	2.4	8	11/4/2021	1,050	910	3,440	<0.001	<0.001	<0.001	<0.003	934	Clear Slight odor
5	24.1	37.65	2.2	8	2/24/2022	1,080		3,350	<0.001	<0.001	<0.001	<0.003	725	Clear Slight odor
5	24.64	37.65	2.1	8	6/3/2022	1,060		3,400	<0.001	<0.001	<0.001	<0.003	992	Clear Slight odor
5	24.07	37.65	2.2	8	8/30/2022	1,060		3,340	<0.001	<0.001	<0.001	<0.003	790	Clear Slight odor
5	24.07	37.65	2.2	8	11/10/2022	960	1,040	3,380	<0.001	<0.001	<0.001	<0.003	772	Clear Slight odor
5	23.57	37.65	2.3	8	3/13/2023	1,100		3,410	<0.001	<0.001	<0.001	<0.003	901	Clear Slight odor
5	23.4	37.65	2.3	8	6/1/2023	1,000		3,420	<0.001	<0.001	<0.001	<0.003	862	Clear Slight odor
5	23.37	37.65	2.3	8	8/15/2023	1,050		3,350	<0.001	<0.001	<0.001	<0.003	814	Clear Slight odor
5	23.9	37.65	2.2	8	12/1/2023	1,000	1,038	3,200	<0.001	<0.001	<0.001	<0.003	813	Clear Slight odor



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 23, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 03/16/23 16:23.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	03/16/2023	Sampling Date:	03/13/2023
Reported:	03/23/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H231214-01)

BTEX 8021B		mg/L		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	2.08		
Toluene*	<0.001	0.001	03/20/2023	ND	0.021	103	0.0200	3.11		
Ethylbenzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	5.88		
Total Xylenes*	<0.003	0.003	03/20/2023	ND	0.063	105	0.0600	5.02		
Total BTEX	<0.006	0.006	03/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	1040	4.00	03/17/2023	ND	104	104	100	3.92		

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	788	125	03/20/2023	ND	18.2	91.0	20.0	16.5		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3450	5.00	03/22/2023	ND	800	80.0	1000	0.377		

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	03/16/2023	Sampling Date:	03/13/2023
Reported:	03/23/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #2 (H231214-02)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	2.08	
Toluene*	<0.001	0.001	03/20/2023	ND	0.021	103	0.0200	3.11	
Ethylbenzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	5.88	
Total Xylenes*	<0.003	0.003	03/20/2023	ND	0.063	105	0.0600	5.02	
Total BTEX	<0.006	0.006	03/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	880	4.00	03/17/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	546	83.3	03/20/2023	ND	18.2	91.0	20.0	16.5	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	2720	5.00	03/22/2023	ND	800	80.0	1000	0.377	

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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	03/16/2023	Sampling Date:	03/13/2023
Reported:	03/23/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #3 (H231214-03)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.003	0.001	03/20/2023	ND	0.020	101	0.0200	2.08	
Toluene*	<0.001	0.001	03/20/2023	ND	0.021	103	0.0200	3.11	
Ethylbenzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	5.88	
Total Xylenes*	<0.003	0.003	03/20/2023	ND	0.063	105	0.0600	5.02	
Total BTEX	<0.006	0.006	03/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1100	4.00	03/17/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	849	125	03/20/2023	ND	18.2	91.0	20.0	16.5	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3380	5.00	03/22/2023	ND	800	80.0	1000	0.377	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	03/16/2023	Sampling Date:	03/13/2023
Reported:	03/23/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #4 (H231214-04)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	2.08	
Toluene*	<0.001	0.001	03/20/2023	ND	0.021	103	0.0200	3.11	
Ethylbenzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	5.88	
Total Xylenes*	<0.003	0.003	03/20/2023	ND	0.063	105	0.0600	5.02	
Total BTEX	<0.006	0.006	03/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1280	4.00	03/17/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	662	83.3	03/20/2023	ND	18.2	91.0	20.0	16.5	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3450	5.00	03/22/2023	ND	800	80.0	1000	0.377	

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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	03/16/2023	Sampling Date:	03/13/2023
Reported:	03/23/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #5 (H231214-05)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	2.08	
Toluene*	<0.001	0.001	03/20/2023	ND	0.021	103	0.0200	3.11	
Ethylbenzene*	<0.001	0.001	03/20/2023	ND	0.020	101	0.0200	5.88	
Total Xylenes*	<0.003	0.003	03/20/2023	ND	0.063	105	0.0600	5.02	
Total BTEX	<0.006	0.006	03/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1100	4.00	03/17/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	901	125	03/20/2023	ND	18.2	91.0	20.0	16.5	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3410	5.00	03/22/2023	ND	800	80.0	1000	0.377	

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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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June 13, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 06/06/23 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/06/2023	Sampling Date:	06/01/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H232872-01)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.005	0.001	06/08/2023	ND	0.019	94.7	0.0200	0.651	
Toluene*	<0.001	0.001	06/08/2023	ND	0.019	95.4	0.0200	2.48	
Ethylbenzene*	<0.001	0.001	06/08/2023	ND	0.019	94.6	0.0200	4.45	
Total Xylenes*	<0.003	0.003	06/08/2023	ND	0.059	98.6	0.0600	5.50	
Total BTEX	<0.006	0.006	06/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1080	4.00	06/07/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	939	125	06/07/2023	ND	16.9	84.6	20.0	8.21	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3440	5.00	06/08/2023	ND	835	83.5	1000	1.52	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/06/2023	Sampling Date:	06/01/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #2 (H232872-02)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/08/2023	ND	0.019	94.7	0.0200	0.651	
Toluene*	<0.001	0.001	06/08/2023	ND	0.019	95.4	0.0200	2.48	
Ethylbenzene*	<0.001	0.001	06/08/2023	ND	0.019	94.6	0.0200	4.45	
Total Xylenes*	<0.003	0.003	06/08/2023	ND	0.059	98.6	0.0600	5.50	
Total BTEX	<0.006	0.006	06/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	790	4.00	06/07/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	706	125	06/07/2023	ND	16.9	84.6	20.0	8.21	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	2750	5.00	06/08/2023	ND	835	83.5	1000	1.52	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/06/2023	Sampling Date:	06/01/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #3 (H232872-03)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.005	0.001	06/08/2023	ND	0.019	94.7	0.0200	0.651	
Toluene*	<0.001	0.001	06/08/2023	ND	0.019	95.4	0.0200	2.48	
Ethylbenzene*	<0.001	0.001	06/08/2023	ND	0.019	94.6	0.0200	4.45	
Total Xylenes*	<0.003	0.003	06/08/2023	ND	0.059	98.6	0.0600	5.50	
Total BTEX	<0.006	0.006	06/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1000	4.00	06/07/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	797	125	06/07/2023	ND	16.9	84.6	20.0	8.21	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3240	5.00	06/08/2023	ND	835	83.5	1000	1.52	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/06/2023	Sampling Date:	06/01/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #4 (H232872-04)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/08/2023	ND	0.019	94.7	0.0200	0.651	
Toluene*	<0.001	0.001	06/08/2023	ND	0.019	95.4	0.0200	2.48	
Ethylbenzene*	<0.001	0.001	06/08/2023	ND	0.019	94.6	0.0200	4.45	
Total Xylenes*	<0.003	0.003	06/08/2023	ND	0.059	98.6	0.0600	5.50	
Total BTEX	<0.006	0.006	06/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1090	4.00	06/07/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	814	125	06/07/2023	ND	16.9	84.6	20.0	8.21	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3550	5.00	06/08/2023	ND	835	83.5	1000	1.52	

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/06/2023	Sampling Date:	06/01/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #5 (H232872-05)

BTEX 8021B		mg/L		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/08/2023	ND	0.019	94.7	0.0200	0.651	
Toluene*	<0.001	0.001	06/08/2023	ND	0.019	95.4	0.0200	2.48	
Ethylbenzene*	<0.001	0.001	06/08/2023	ND	0.019	94.6	0.0200	4.45	
Total Xylenes*	<0.003	0.003	06/08/2023	ND	0.059	98.6	0.0600	5.50	
Total BTEX	<0.006	0.006	06/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1000	4.00	06/07/2023	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	862	125	06/07/2023	ND	16.9	84.6	20.0	8.21	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3420	5.00	06/08/2023	ND	835	83.5	1000	1.52	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 28, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 08/21/23 9:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/21/2023	Sampling Date:	08/15/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H234525-01)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	08/28/2023	ND	0.020	102	0.0200	0.759	
Toluene*	<0.001	0.001	08/28/2023	ND	0.019	97.4	0.0200	1.17	
Ethylbenzene*	<0.001	0.001	08/28/2023	ND	0.019	93.8	0.0200	0.107	
Total Xylenes*	<0.003	0.003	08/28/2023	ND	0.057	95.3	0.0600	0.761	
Total BTEX	<0.006	0.006	08/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.8 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1440	4.00	08/21/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	742	125	08/23/2023	ND	19.1	95.6	20.0	7.01	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3720	5.00	08/25/2023	ND	247	82.3	300	2.41	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/21/2023	Sampling Date:	08/15/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #2 (H234525-02)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	08/28/2023	ND	0.020	102	0.0200	0.759	
Toluene*	<0.001	0.001	08/28/2023	ND	0.019	97.4	0.0200	1.17	
Ethylbenzene*	<0.001	0.001	08/28/2023	ND	0.019	93.8	0.0200	0.107	
Total Xylenes*	<0.003	0.003	08/28/2023	ND	0.057	95.3	0.0600	0.761	
Total BTEX	<0.006	0.006	08/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.8 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	880	4.00	08/21/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	502	125	08/23/2023	ND	19.1	95.6	20.0	7.01	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	2510	5.00	08/25/2023	ND	247	82.3	300	2.41	

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/21/2023	Sampling Date:	08/15/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #3 (H234525-03)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	08/28/2023	ND	0.020	102	0.0200	0.759	
Toluene*	<0.001	0.001	08/28/2023	ND	0.019	97.4	0.0200	1.17	
Ethylbenzene*	<0.001	0.001	08/28/2023	ND	0.019	93.8	0.0200	0.107	
Total Xylenes*	<0.003	0.003	08/28/2023	ND	0.057	95.3	0.0600	0.761	
Total BTEX	<0.006	0.006	08/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	900	4.00	08/21/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	752	125	08/23/2023	ND	19.1	95.6	20.0	7.01	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	2850	5.00	08/25/2023	ND	247	82.3	300	2.41	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/21/2023	Sampling Date:	08/15/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #4 (H234525-04)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	08/28/2023	ND	0.020	102	0.0200	0.759	
Toluene*	<0.001	0.001	08/28/2023	ND	0.019	97.4	0.0200	1.17	
Ethylbenzene*	<0.001	0.001	08/28/2023	ND	0.019	93.8	0.0200	0.107	
Total Xylenes*	<0.003	0.003	08/28/2023	ND	0.057	95.3	0.0600	0.761	
Total BTEX	<0.006	0.006	08/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1050	4.00	08/21/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	814	125	08/23/2023	ND	19.1	95.6	20.0	7.01	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3350	5.00	08/25/2023	ND	247	82.3	300	2.41	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	08/21/2023	Sampling Date:	08/15/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #5 (H234525-05)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	08/28/2023	ND	0.020	102	0.0200	0.759	
Toluene*	<0.001	0.001	08/28/2023	ND	0.019	97.4	0.0200	1.17	
Ethylbenzene*	<0.001	0.001	08/28/2023	ND	0.019	93.8	0.0200	0.107	
Total Xylenes*	<0.003	0.003	08/28/2023	ND	0.057	95.3	0.0600	0.761	
Total BTEX	<0.006	0.006	08/28/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.7 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1020	4.00	08/21/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	790	125	08/23/2023	ND	19.1	95.6	20.0	7.01	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3420	5.00	08/25/2023	ND	247	82.3	300	2.41	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 08, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 12/04/23 13:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/04/2023	Sampling Date:	12/01/2023
Reported:	12/08/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H236495-01)

BTEX 8021B		mg/L		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.015	0.001	12/05/2023	ND	0.020	101	0.0200	9.36	
Toluene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	6.01	
Ethylbenzene*	0.001	0.001	12/05/2023	ND	0.020	102	0.0200	4.18	
Total Xylenes*	<0.003	0.003	12/05/2023	ND	0.059	99.1	0.0600	3.33	GC-NC
Total BTEX	0.016	0.006	12/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	4050	4.00	12/05/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	159	25.0	12/05/2023	ND	21.6	108	20.0	9.47	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	6830	5.00	12/08/2023	ND	529	106	500	3.27	

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/04/2023	Sampling Date:	12/01/2023
Reported:	12/08/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #2 (H236495-02)

BTEX 8021B		mg/L		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/05/2023	ND	0.020	101	0.0200	9.36	
Toluene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	6.01	
Ethylbenzene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	4.18	
Total Xylenes*	<0.003	0.003	12/05/2023	ND	0.059	99.1	0.0600	3.33	
Total BTEX	<0.006	0.006	12/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.2 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	580	4.00	12/05/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	128	25.0	12/05/2023	ND	21.6	108	20.0	9.47	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	1260	5.00	12/08/2023	ND	529	106	500	3.27	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/04/2023	Sampling Date:	12/01/2023
Reported:	12/08/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #3 (H236495-03)

BTEX 8021B		mg/L		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.002	0.001	12/05/2023	ND	0.020	101	0.0200	9.36	
Toluene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	6.01	
Ethylbenzene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	4.18	
Total Xylenes*	<0.003	0.003	12/05/2023	ND	0.059	99.1	0.0600	3.33	
Total BTEX	<0.006	0.006	12/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1020	4.00	12/05/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	874	125	12/05/2023	ND	21.6	108	20.0	9.47	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3360	5.00	12/08/2023	ND	529	106	500	3.27	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/04/2023	Sampling Date:	12/01/2023
Reported:	12/08/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #4 (H236495-04)

BTEX 8021B		mg/L		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/05/2023	ND	0.020	101	0.0200	9.36	
Toluene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	6.01	
Ethylbenzene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	4.18	
Total Xylenes*	<0.003	0.003	12/05/2023	ND	0.059	99.1	0.0600	3.33	
Total BTEX	<0.006	0.006	12/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1000	4.00	12/05/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	771	125	12/05/2023	ND	21.6	108	20.0	9.47	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3340	5.00	12/08/2023	ND	529	106	500	3.27	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/04/2023	Sampling Date:	12/01/2023
Reported:	12/08/2023	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #5 (H236495-05)

BTEX 8021B		mg/L		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/05/2023	ND	0.020	101	0.0200	9.36	
Toluene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	6.01	
Ethylbenzene*	<0.001	0.001	12/05/2023	ND	0.020	102	0.0200	4.18	
Total Xylenes*	<0.003	0.003	12/05/2023	ND	0.059	99.1	0.0600	3.33	
Total BTEX	<0.006	0.006	12/05/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 77.5-125

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1000	4.00	12/05/2023	ND	100	100	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	813	125	12/05/2023	ND	21.6	108	20.0	9.47	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3200	5.00	12/08/2023	ND	529	106	500	3.27	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- QR-04 The RPD for the BS/BSD was outside of historical limits.
- GC-NC 8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

From: OCDOnline@state.nm.us
To: [Katie Jones](#)
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 202257
Date: Wednesday, November 29, 2023 2:02:37 PM

To whom it may concern (c/o Katie Davis for RICE OPERATING COMPANY),

The OCD has approved the submitted *Ground Water Abatement* (GROUND WATER ABATEMENT), for incident ID (n#) nAPP2109547013, with the following conditions:

- **Review of the 2022 Annual Report and Path Forward: Content Satisfactory 1. NMOCD suggests requesting a meeting to discuss options going forward for high chlorides in groundwater at the site. 2. Discontinuing chloride detection in groundwater monitoring samples at the site is currently not approved. 3. Please continue to conduct groundwater monitoring at the site until eight (8) consecutive sampling events and lab analyses demonstrate below NMWQCC standards in 20.6.2.3108 of the NMAC 4. Please submit the 2023 Annual Groundwater Monitoring Report by April 1, 2024.**

The signed GROUND WATER ABATEMENT can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,
Michael Buchanan
Environmental Specialist
505-490-0798
Michael.Buchanan@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 327841

CONDITIONS

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 327841
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2023 Annual Report fothe EME-H20 SWD (1R427-87): content satisfactory 1. Propose abatement options or set up meeting with OCD to discuss options for abatement, as previously suggested. 2. ROC must provide data from any up-gradient source that has the potential to contaminate underneath EME H-20 SWD. 3. Continue to conduct groundwater monitoring for all constituents (BTEX, TDS, sulfate and chloride) until such meeting is set with the OCD and provide annual report to OCD by April 1, 2025.	2/28/2025