L Peter Galusky, Jr PE

5935 Exeter Circle Norcross, GA 30071 | 470 955-5335 | peter@bluerock.pro

April 1st, 2024

REVIEWED
By Mike Buchanan at 11:43 am, Dec 30, 2024

Nelson Velez
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

Review of the 2023 Annual Report submitted for ROC, Vacuum L-26 Vent (1R425-66): content satisfactory
1. Continue to sample MW-1R, MW-2, MW-3 until all COCs; sulfate, chloride and TDS are below the WQCC human health standards inTitle 20 of the NMAC.
2. If ROC believes that these COCs are naturally occurring in the geological area, this may be demonstrated by submitting a work plan to establish a background level by installing a monitoring well upgradient of the incident, in an undisturbed area. If the intent is to close the incident sooner, this may be an option, but must be proposed.
3. Otherwise, please continue to submit groundwater monitoring reports with sampling occurring as prescribed and approved by the OCD.
4. Submit the 2024 groundwater monitoring report to OCD by--or before--April 1, 2025.

Re: **2023 Annual Report**
Rice Operating Company – Vacuum SWD Syste
Vacuum L-26 Vent (1R425-66): UL L, Section
NMOCD Application ID: 202306, Incident ID: n

Sent via E-mail

Mr. Velez:

This letter summarizes progress made over the past calendar year pursuant to the NMOCD's approved Corrective Action Plan and Addendum of April 4th, 2011, for this site. The site is operated by Rice Operating Company (ROC) and is located approximately 2.5 miles east of Buckeye, New Mexico at T17S, R35E, Section 26 (L), as shown in the site location map in Appendix, Figure 1. A site schematic diagram is given in the Appendix, Figure 2 and a Groundwater Elevation and Flow Map is given in the Appendix, Figure 3. The depth to groundwater (water table) averaged approximately 60 +/- ft below ground surface across the site in 2023.

Background and Previous Work

In 2008, ROC conducted field investigation on the former junction box. Soil samples were collected at regular intervals, creating a 30x30x12 ft deep excavation. Based on this investigation, a 30x30-ft geo-synthetic liner was installed at approximately 5 ft bgs. The liner was padded with six inches of blow sand both above and below. The excavation was backfilled with blended, excavated soil and contoured to the surrounding area. NMOCD was notified of potential groundwater impact on December 1st, 2008, and a disclosure report was submitted with all the 2008 Junction Box Closures and Disclosures.

Deeper soil sampling was initiated in 2010 which indicated elevated levels of soil chlorides throughout the vadose zone. This was summarized in the September 4th, 2011, Initial Characterization Report and Corrective Action Plan submitted to NMOCD and which recommended the installation of a near-source monitor well. A subsequent Corrective Action Plan and Addendum of April 4th, 2011 was submitted to NMOCD which proposed the installation of a 64x63-ft sub-surface synthetic liner to isolate and prevent the downward migration of residual soil chlorides (Appendix – Figure 2), and the installation additional monitor wells to further delineate groundwater quality. This was approved by NMOCD on April 4th, 2011 and two additional monitoring wells were installed on April 4th, 2011. The liner installation was completed in the summer of 2011. A report detailing this work was submitted on August 2nd, 2011 and NMOCD granted soil closure on October 13th, 2011. According to the Additional Groundwater Monitoring and CAP for Groundwater, MW-1 was plugged and replaced with a 4 inch well (MW-1R). Groundwater removal began in July 2012 and has continued through 2019. In 2020, NMOCD granted approval to temporarily cease groundwater recovery and recovery resumed in 2021.

Results of Groundwater Monitoring

Results of groundwater sampling from 2009 through 2023 are given in the Appendix (Figure 4, Tables 1 & 2). Average annual groundwater chloride concentrations in the up-gradient monitor well (MW-2) rose from 102 mg/l in 2022 to 122 mg/l in 2023. Groundwater chloride concentrations in the near-source pumping well (MW-1R) were essentially unchanged, measuring 265 mg/l in 2022 versus 267 mg/l in 2023. Groundwater chloride concentrations in the down-gradient monitor well (MW-3) remained low at 313 mg/l in 2022 and 351 mg/l in 2023. Sampling for BTEX was suspended after early 2020, with NMOCD permission, as concentrations were consistently below detectable limits in all monitor wells since sampling began in 2010. A total of 34,822 bbls of groundwater have been withdrawn from MW-1R since pumping began in 2013 resulting in the removal of approximately 721 kg of groundwater chloride. The withdrawn groundwater has been used for a purposeful use.

Path Forward

On May 23rd, 2023, NMOCD requested a Termination Request based on eight consecutive quarters below the allowable concentrations for chloride, TDS, and sulfate (Appendix – Exhibit 1). ROC submitted a Termination Request to NMOCD on August 7th, 2023. NMOCD denied the approval on March 15th 2024. ROC will continue groundwater monitoring and recovery at this site through 2024.

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

We submit this report for your review and consideration.

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

Thank you.

Sincerely,

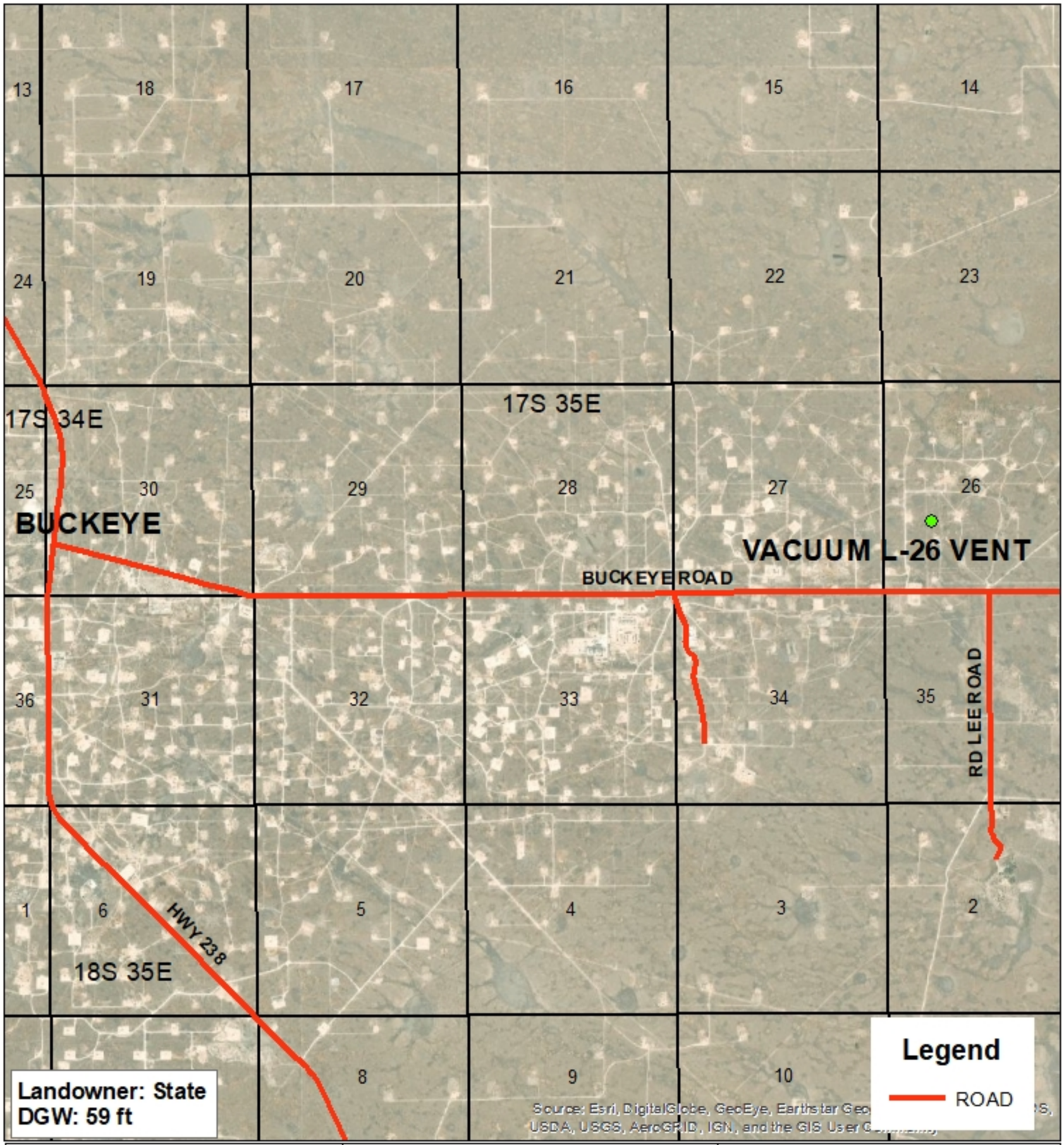
L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

Copy: Rice Operating Company

Attachments: … as noted in text

Geographic Location

Figure 1



RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM L-26 VENT

1R425-66

UL L SECTION 26
T17S R35E
LEA COUNTY, NM

GPS: 32.803423 -103.432869
NAD83 STATE PLANE PROJ
NM EAST ZONE

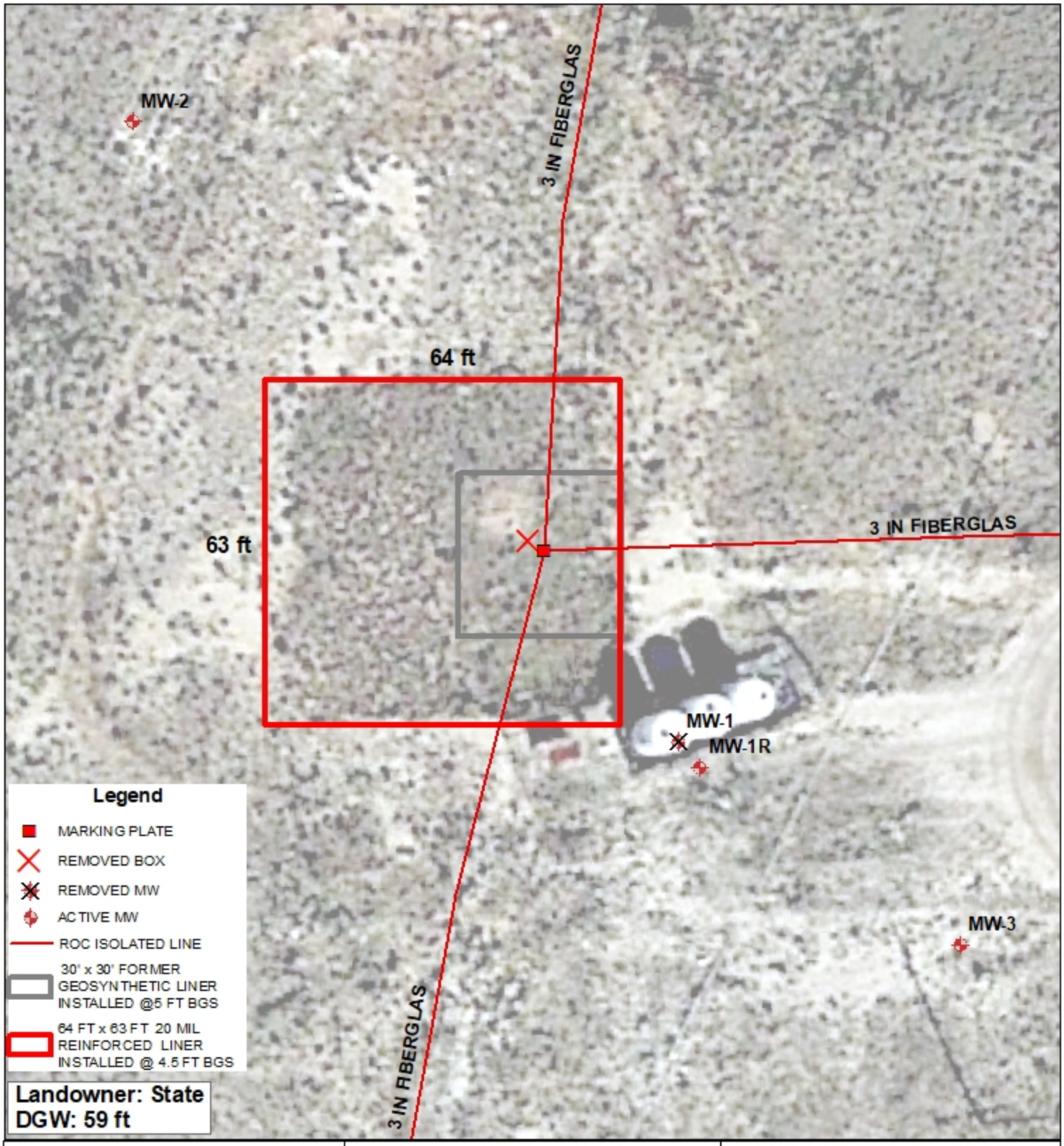
0 0.5 1 Miles

N
W E
S

Drawing date: 2/5/20
Drafted by: T. Grieco

Site Map

Figure 2



RICE OPERATING COMPANY
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SINCE 1955

VACUUM L-26 VENT

1R425-66

UL L SECTION 26
T-17-S R-35-E
LEA COUNTY, NM

GPS: 32.803423 -103.432869
NAD83 STATE PLANE PROJ
NM EAST ZONE

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Feet

Drawing date: 2/5/20
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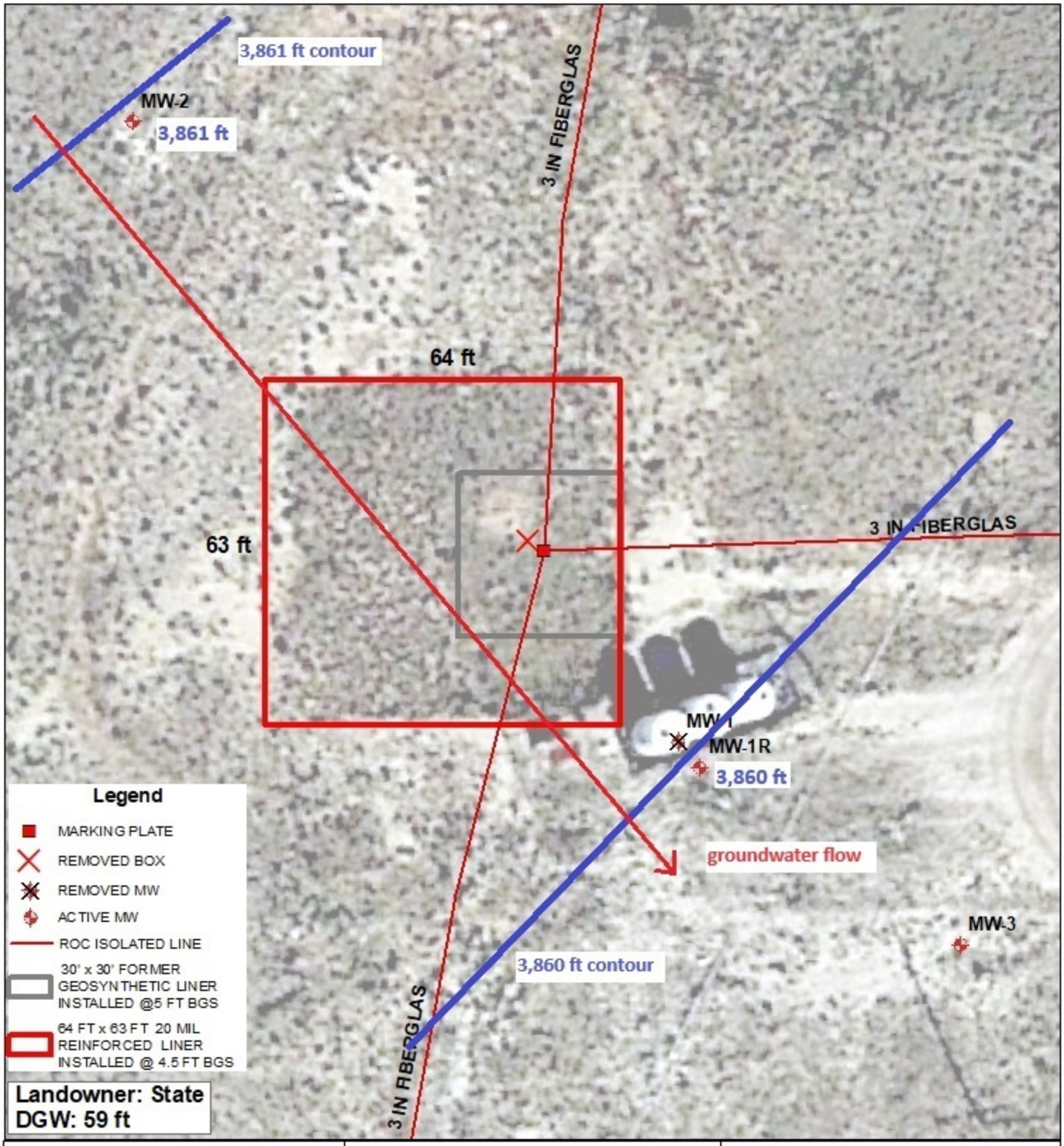
Groundwater Elevation and Flow Map

Figure 3



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VACUUM L-26 VENT

1R425-66

UL L SECTION 26
T-17-S R-35-E
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Figure 4

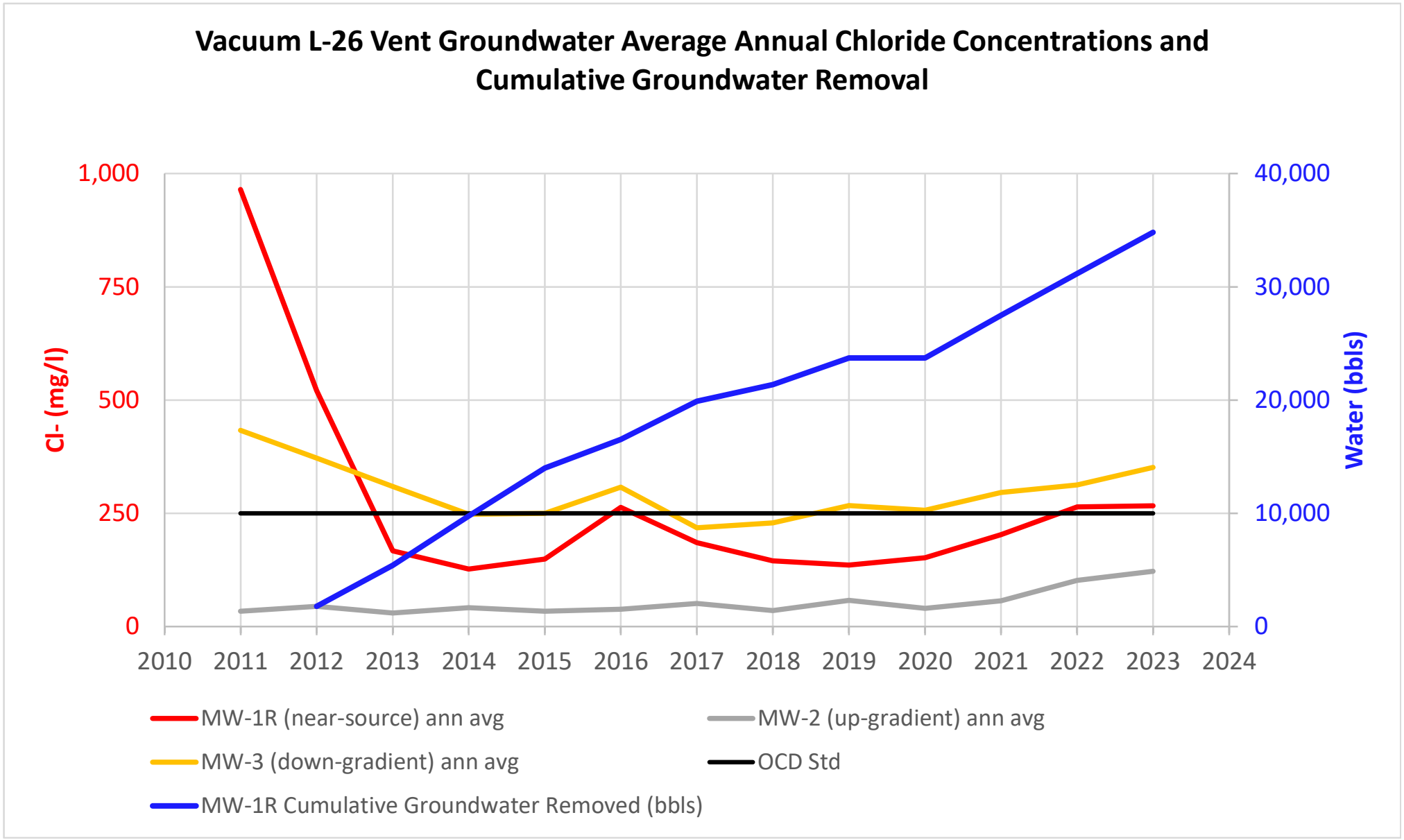
Vacuum L-26 Vent Groundwater Average Annual Chloride Concentrations and Cumulative Groundwater Removal
Cl- (mg/l)
Water (bbls)
1,000
750
500
250
0
40,000
30,000
20,000
10,000
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
MW-1R (near-source) ann avg
MW-2 (up-gradient) ann avg
MW-3 (down-gradient) ann avg
OCD Std
MW-1R Cumulative Groundwater Removed (bbls)

Table 1

Vacuum L-26 Vent Groundwater Chloride Annual Averages (mg/l)
and Groundwater Annual Volumes (bbls) **and Chloride Mass** (kg) **Removed**

Year	MW-1R (near-source) ann avg	MW-2 (up-gradient) ann avg	MW-3 (down-gradient) ann avg	OCD Std	MW-1R Cumulative Groundwater Removed (bbls)	MW-1R Cumulative Cl- Removed (kg)
2010						
2011	965	34	433	250		
2012	521	45	372	250	1,783	37
2013	167	30	309	250	5,424	97
2014	127	42	248	250	9,762	154
2015	149	34	250	250	14,007	259
2016	263	38	308	250	16,527	300
2017	185	51	218	250	19,897	361
2018	145	35	229	250	21,357	387
2019	136	58	268	250	23,717	439
2020	152	40	257	250	23,717	439
2021	203	57	296	250	27,481	528
2022	265	102	313	250	31,163	626
2023	267	122	351	250	34,822	721

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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	56.53	72.54	2.6	10	11/22/2010	940	940	2,120	<0.001	<0.001	<0.001	<0.003	79.6	Clear No odor
1	56.6	72.57	2.6	10	2/16/2011	960		2,130	<0.001	<0.001	<0.001	<0.003	64	Clear No odor
1	56.7	72.57	2.5	10	6/4/2011	1,040		2,710	<0.001	<0.001	<0.001	<0.003	64.7	Clear No odor
1	56.79	72.57	2.5	10	8/31/2011	940		2,440	<0.001	<0.001	<0.001	<0.003	67	Clear No odor
1	56.88	72.57	2.5	10	12/2/2011	920	965	2,230	<0.001	<0.001	<0.001	<0.003	73.7	Clear No odor
1	56.95	72.57	2.5	10	2/22/2012	970		1,930	<0.001	<0.001	<0.001	<0.003	66.3	Clear No odor
1	57.06	72.57	2.5	10	5/29/2012	710		1,910	<0.001	<0.001	<0.001	<0.003	66.4	Clear No odor
1	XXX	XXX	0	Pumping	8/24/2012	116		551	<0.001	<0.001	<0.001	<0.003	63.6	Clear No odor
1	XXX	XXX	0	Pumping	11/15/2012	288	521	960	<0.001	<0.001	<0.001	<0.003	59.5	Clear No odor
1	XXX	XXX	0	Pumping	2/12/2013	300		958	<0.001	<0.001	<0.001	<0.003	55.1	Clear No odor
1R	XXX	XXX	0	Pumping	5/30/2013	140		651	<0.001	<0.001	<0.001	<0.003	60	Clear No odor
1R	XXX	XXX	0	Pumping	9/6/2013	148		692	<0.001	<0.001	<0.001	<0.003	50.2	Clear No odor
1R	XXX	XXX	0	Pumping	11/19/2013	80	167	446	<0.001	<0.001	<0.001	<0.003	58.7	Clear No odor
1R	XXX	XXX	0	90	3/5/2014	256		806	<0.001	<0.001	<0.001	<0.003	58.6	Clear No odor
1R	XXX	XXX	0	Pumping	5/29/2014	88		490	<0.001	<0.001	<0.001	<0.003	59.3	Clear No odor
1R	XXX	XXX	0	Pumping	8/20/2014	80		468	<0.001	<0.001	<0.001	<0.003	56.4	Clear No odor
1R	XXX	XXX	0	90	11/20/2014	84	127	498	<0.001	<0.001	<0.001	<0.003	53.7	Clear No odor
1R	XXX	XXX	0	90	3/2/2015	140		644	<0.001	<0.001	<0.001	<0.003	46.9	Clear No odor
1R	XXX	XXX	0	Pumping	6/2/2015	44		590	<0.001	<0.001	<0.001	<0.003	37.2	Clear No odor
1R	XXX	XXX	0	Pumping	8/20/2015	196		676	<0.001	<0.001	<0.001	<0.003	42	Clear No odor
1R	XXX	XXX	0	Pumping	11/10/2015	216	149	654	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
1R	XXX	XXX	XXX	100	2/25/2016	200		640	<0.001	<0.001	<0.001	<0.003	60	Clear No odor
1R	XXX	XXX	XXX	100	5/18/2016	408		1,270	<0.001	<0.001	<0.001	<0.003	112	Clear No odor
1R	XXX	XXX	XXX	Running	9/12/2016	88		442	<0.001	<0.001	<0.001	<0.003	61	Clear No odor
1R	XXX	XXX	XXX	100	11/11/2016	356	263	1,140	<0.001	<0.001	<0.001	<0.003	56	Clear No odor
1R	XXX	XXX	XXX	100	2/21/2017	264		998	<0.001	<0.001	<0.001	<0.003	58	Clear No odor

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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
1R	XXX	XXX	XXX	Running	5/23/2017	208		944	<0.001	<0.001	<0.001	<0.003	55	Clear No odor
1R	XXX	XXX	XXX	Running	9/8/2017	108		684	<0.001	<0.001	<0.001	<0.003	58	Clear No odor
1R	XXX	XXX	XXX	100	11/29/2017	160	185	796	<0.001	<0.001	<0.001	<0.003	56	Clear No odor
1R	XXX	XXX	XXX	100	2/27/2018	188		810	<0.001	<0.001	<0.001	<0.003	54.4	Clear No odor
1R	XXX	XXX	XXX	100	5/16/2018	240		960	<0.001	<0.001	<0.001	<0.003	58.5	Clear No odor
1R	XXX	XXX	XXX	100	9/6/2018	108		460	<0.001	<0.001	<0.001	<0.003	53.4	Clear No odor
1R	XXX	XXX	XXX	100	11/14/2018	44	145	520	<0.001	<0.001	<0.001	<0.003	54.3	Clear No odor
1R	XXX	XXX	XXX	100	3/5/2019	160		754	<0.001	<0.001	<0.001	<0.003	54	Clear No odor
1R	XXX	XXX	XXX	Running	5/28/2019	140		583	<0.001	<0.001	<0.001	<0.003	55	Clear No odor
1R	XXX	XXX	XXX	Running	8/29/2019	144		650	<0.001	<0.001	<0.001	<0.003	54	Clear No odor
1R	XXX	XXX	XXX	100	11/15/2019	100	136	765	<0.001	<0.001	<0.001	<0.003	46	Clear No odor
1R	XXX	XXX	XXX	100	3/5/2020	108		774	<0.001	<0.001	<0.001	<0.003	54.9	Clear No odor
1R	XXX	XXX	XXX	100	6/15/2020	128		836	XXX	XXX	XXX	XXX	62.2	Clear No odor
1R	XXX	XXX	XXX	100	9/10/2020	120		730	XXX	XXX	XXX	XXX	52.8	Clear No odor
1R	XXX	XXX	XXX	100	11/5/2020	252	152	972	XXX	XXX	XXX	XXX	69	Clear No odor
1R	XXX	XXX	XXX	100	3/10/2021	240		1,050	XXX	XXX	XXX	XXX	57.7	Clear No odor
1R	XXX	XXX	XXX	Running	6/10/2021	148		637	XXX	XXX	XXX	XXX	57.5	Clear No odor
1R	XXX	XXX	XXX	Running	9/10/2021	184		749	XXX	XXX	XXX	XXX	57	Clear No odor
1R	XXX	XXX	XXX	100	11/9/2021	240	203	978	XXX	XXX	XXX	XXX	64.6	Clear No odor
1R	XXX	XXX	XXX	100	3/1/2022	312		1,080	XXX	XXX	XXX	XXX	69.7	Clear No odor
1R	XXX	XXX	XXX	Running	6/6/2022	132		553	XXX	XXX	XXX	XXX	55.6	Clear No odor
1R	XXX	XXX	XXX	Running	9/6/2022	284		890	XXX	XXX	XXX	XXX	68.5	Clear No odor
1R	XXX	XXX	XXX	100	11/30/2022	330	265	1,100	XXX	XXX	XXX	XXX	52.9	Clear No odor

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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
1R	XXX	XXX	XXX	100	3/16/2023	450		993	XXX	XXX	XXX	XXX	55.2	Clear No odor
1R	XXX	XXX	XXX	Running	6/2/2023	240		833	XXX	XXX	XXX	XXX	62	Clear No odor
1R	XXX	XXX	XXX	Running	8/16/2023	124		559	XXX	XXX	XXX	XXX	56.9	Clear No odor
1R	XXX	XXX	XXX	Running	10/12/2023	252	267	858	XXX	XXX	XXX	XXX	68.6	Clear No 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	56.93	62.78	0.9	10	8/31/2011	32		374	<0.001	<0.001	<0.001	<0.003	33.5	Clear No odor
2	57.02	62.78	0.9	10	12/2/2011	36	34	405	<0.001	<0.001	<0.001	<0.003	40.8	Clear No odor
2	57.09	62.78	0.9	10	2/22/2012	92		408	<0.001	<0.001	<0.001	<0.003	41.6	Clear No odor
2	57.2	62.78	0.9	10	5/29/2012	28		411	<0.001	<0.001	<0.001	<0.003	41.4	Clear No odor
2	57.44	62.78	0.9	10	8/24/2012	28		490	<0.001	<0.001	<0.001	<0.003	27.7	Clear No odor
2	54.48	62.78	1.3	10	11/15/2012	32	45	518	<0.001	<0.001	<0.001	<0.003	20.3	Clear No odor
2	57.49	62.78	0.8	10	2/12/2013	28		573	<0.001	<0.001	<0.001	<0.003	28.7	Clear No odor
2	57.62	62.78	0.8	10	5/30/2013	32		611	<0.001	<0.001	<0.001	<0.003	28.7	Clear No odor
2	57.75	62.78	0.8	10	9/6/2013	32		646	<0.001	<0.001	<0.001	<0.003	31	Clear No odor
2	57.81	62.78	0.8	10	11/19/2013	28	30	587	<0.001	<0.001	<0.001	<0.003	32.2	Clear No odor
2	57.88	62.78	0.8	10	3/5/2014	32		308	<0.001	<0.001	<0.001	<0.003	61.2	Clear No odor
2	58.03	62.78	0.8	10	5/29/2014	72		454	<0.001	<0.001	<0.001	<0.003	51.9	Clear No odor
2	58.02	62.78	0.8	10	8/19/2014	32		558	<0.001	<0.001	<0.001	<0.003	32.9	Clear No odor
2	57.16	62.78	0.9	10	11/20/2014	32	42	526	<0.001	<0.001	<0.001	<0.003	31.3	Clear No odor
2	57.13	62.78	0.9	10	3/2/2015	32		546	<0.001	<0.001	<0.001	<0.003	28.2	Clear No odor
2	54.44	62.78	1.3	10	6/2/2015	32		586	<0.001	<0.001	<0.001	<0.003	40.7	Clear No odor
2	57.64	62.78	0.8	10	8/20/2015	36		546	<0.001	<0.001	<0.001	<0.003	35.4	Clear No odor
2	57.82	62.78	0.79	8	11/10/2015	36	34	510	<0.001	<0.001	<0.001	<0.003	38.6	Clear No odor
2	57.97	62.78	0.8	8	2/25/2016	52		496	<0.001	<0.001	<0.001	<0.003	49	Clear No odor

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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	58.05	62.78	0.8	6	5/18/2016	28		564	<0.001	<0.001	<0.001	<0.003	48	Clear No odor
2	58.17	62.78	0.7	6	9/12/2016	40		432	<0.001	<0.001	<0.001	<0.003	44	Clear No odor
2	58.15	62.78	0.7	8	11/11/2016	32	38	444	<0.001	<0.001	<0.001	<0.003	41	Clear No odor
2	58.32	62.78	0.7	10	2/21/2017	40		490	<0.001	<0.001	<0.001	<0.003	44	Clear No odor
2	57.64	62.78	0.7	10	5/23/2017	96		512	<0.001	<0.001	<0.001	<0.003	56	Clear No odor
2	58.49	62.78	0.7	10	9/8/2017	36		628	<0.001	<0.001	<0.001	<0.003	51	Clear No odor
2	58.52	62.78	0.7	10	11/29/2017	32	51	638	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
2	58.57	62.78	0.7	6	2/27/2018	40		622	<0.001	<0.001	<0.001	<0.003	46.9	Clear No odor
2	58.63	62.78	0.7	6	5/16/2018	32		606	<0.001	<0.001	<0.001	<0.003	50.3	Clear No odor
2	58.74	62.78	0.6	6	9/6/2018	32		532	<0.001	<0.001	<0.001	<0.003	50.1	Clear No odor
2	58.82	62.78	0.6	6	11/14/2018	36	35	664	<0.001	<0.001	<0.001	<0.003	52.2	Clear No odor
2	58.93	62.78	0.6	6	3/5/2019	32		512	<0.001	<0.001	<0.001	<0.003	48	Clear No odor
2	59.03	62.78	0.6	6	5/28/2019	28		673	<0.001	<0.001	<0.001	<0.003	48	Clear No odor
2	59.16	62.78	0.6	6	8/29/2019	144		622	<0.001	<0.001	<0.001	<0.003	53	Clear No odor
2	59.24	62.78	0.6	6	11/15/2019	28	58	606	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
2	59.34	62.78	0.6	6	3/5/2020	32		669	<0.001	<0.001	<0.001	<0.003	48.7	Clear No odor
2	59.45	62.78	0.5	6	6/15/2020	72		793	XXX	XXX	XXX	XXX	53.8	Clear No odor
2	59.56	62.78	0.5	6	9/10/2020	24		686	XXX	XXX	XXX	XXX	43.4	Clear No odor
2	59.64	62.78	0.5	6	11/5/2020	32	40	560	XXX	XXX	XXX	XXX	68.1	Clear No odor
2	59.72	62.78	0.5	6	3/10/2021	28		668	XXX	XXX	XXX	XXX	49.1	Clear No odor
2	59.93	62.78	0.5	6	6/10/2021	32		700	XXX	XXX	XXX	XXX	52.4	Clear No odor
2	60.02	62.78	0.4	6	9/10/2021	128		580	XXX	XXX	XXX	XXX	52.3	Clear No odor
2	59.98	62.78	0.5	6	11/9/2021	40	57	658	XXX	XXX	XXX	XXX	55.4	Clear No odor
2	60.27	62.78	0.4	4	3/1/2022	104		458	XXX	XXX	XXX	XXX	64.2	Clear No odor
2	60.42	62.78	0.4	4	6/6/2022	36		564	XXX	XXX	XXX	XXX	54.7	Clear No odor
2	60.49	62.78	0.4	4	9/6/2022	160		644	XXX	XXX	XXX	XXX	61.3	Clear No odor
2	59.88	62.78	0.4	4	11/30/2022	108	102	481	XXX	XXX	XXX	XXX	52.3	Clear No odor

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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	60.74	62.78	0.3	3	3/16/2023	108		568	XXX	XXX	XXX	XXX	61.9	Clear No odor
2	60.87	62.78	0.3	1.5	6/2/2023	148		597	XXX	XXX	XXX	XXX	57.1	Clear No odor
2	60.98	62.78	0.3	3	8/16/2023	136		581	XXX	XXX	XXX	XXX	63	Clear No odor
2	61.02	62.78	0.3	1.5	10/12/2023	96	122	466	XXX	XXX	XXX	XXX	73.8	Clear No 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	52.24	68.92	2.7	10	8/31/2011	416		1,250	<0.001	<0.001	<0.001	<0.003	47.3	Clear No odor
3	56.34	68.92	2	10	12/2/2011	450	433	1,330	<0.001	<0.001	<0.001	<0.003	56.8	Clear No odor
3	56.4	68.92	2	10	2/22/2012	332		1,330	<0.001	<0.001	<0.001	<0.003	54.9	Clear No odor
3	56.57	68.92	2	10	5/29/2012	380		1,220	<0.001	<0.001	<0.001	<0.003	57.4	Clear No odor
3	56.74	68.92	1.9	10	8/24/2012	400		1,220	<0.001	<0.001	<0.001	<0.003	48.9	Clear No odor
3	56.77	68.92	1.9	10	11/15/2012	376	372	1,240	<0.001	<0.001	<0.001	<0.003	48.7	Clear No odor
3	56.78	68.92	1.9	10	2/12/2013	352		1,260	<0.001	<0.001	<0.001	<0.003	52.6	Clear No odor
3	56.91	68.92	1.9	10	5/30/2013	320		1,220	<0.001	<0.001	<0.001	<0.003	49	Clear No odor
3	56.91	68.92	1.9	10	9/6/2013	292		1,170	<0.001	<0.001	<0.001	<0.003	46.2	Clear No odor
3	57.1	69.92	1.9	10	11/19/2013	272	309	1,150	<0.001	<0.001	<0.001	<0.003	45.1	Clear No odor
3	57.17	68.92	1.9	10	3/5/2014	256		984	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
3	57.33	68.92	1.9	10	5/29/2014	248		826	<0.001	<0.001	<0.001	<0.003	86.2	Clear No odor
3	57.34	68.92	1.9	10	8/19/2014	236		1,090	<0.001	<0.001	<0.001	<0.003	38.7	Clear No odor
3	56.49	68.92	2	10	11/20/2014	252	248	1,030	<0.001	<0.001	<0.001	<0.003	32.4	Clear No odor
3	56.43	68.92	2	10	3/2/2015	252		1,030	<0.001	<0.001	<0.001	<0.003	42	Clear No odor
3	56.78	68.92	1.9	10	6/2/2015	268		1,060	<0.001	<0.001	<0.001	<0.003	45.3	Clear No odor
3	57.01	68.92	1.9	10	8/20/2015	164		1,100	<0.001	<0.001	<0.001	<0.003	47.5	Clear No odor
3	57.23	68.92	1.87	10	11/10/2015	316	250	1,090	<0.001	<0.001	<0.001	<0.003	50.5	Clear No odor
3	57.25	68.92	1.9	10	2/25/2016	320		1,160	<0.001	<0.001	<0.001	<0.003	49	Clear No odor
3	57.38	68.92	1.8	8	5/18/2016	324		1,180	<0.001	<0.001	<0.001	<0.003	62.2	Clear No odor

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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	57.51	68.92	1.8	10	9/12/2016	296		1,150	<0.001	<0.001	<0.001	<0.003	53	Clear No odor
3	57.48	68.92	1.8	10	11/11/2016	292	308	1,050	<0.001	<0.001	<0.001	<0.003	44	Clear No odor
3	57.61	68.92	1.8	10	2/21/2017	200		1,380	<0.001	<0.001	<0.001	<0.003	43	Clear No odor
3	57.64	68.92	1.8	10	5/23/2017	220		980	<0.001	<0.001	<0.001	<0.003	59	Clear No odor
3	57.85	68.92	1.8	10	9/8/2017	204		942	<0.001	<0.001	<0.001	<0.003	59	Clear No odor
3	57.88	68.92	1.8	10	11/29/2017	248	218	930	<0.001	<0.001	<0.001	<0.003	55	Clear No odor
3	57.86	68.92	1.8	10	2/27/2018	208		766	<0.001	<0.001	<0.001	<0.003	51.3	Clear No odor
3	57.93	68.92	1.8	10	5/16/2018	248		962	<0.001	<0.001	<0.001	<0.003	57.7	Clear No odor
3	58.12	68.92	1.7	10	9/6/2018	224		916	<0.001	<0.001	<0.001	<0.003	53.4	Clear No odor
3	58.14	68.92	1.7	10	11/14/2018	236	229	856	<0.001	<0.001	<0.001	<0.003	57.4	Clear No odor
3	58.24	68.92	1.7	10	3/5/2019	268		968	<0.001	<0.001	<0.001	<0.003	57	Clear No odor
3	58.4	68.92	1.7	10	5/28/2019	260		1,010	<0.001	<0.001	<0.001	<0.003	60	Clear No odor
3	58.22	68.92	1.7	10	8/29/2019	256		938	<0.001	<0.001	<0.001	<0.003	54	Clear No odor
3	58.56	68.92	1.7	10	11/15/2019	286	268	1,020	<0.001	<0.001	<0.001	<0.003	56	Clear No odor
3	58.68	68.92	1.6	10	3/5/2020	248		1,000	<0.001	<0.001	<0.001	<0.003	64.4	Clear No odor
3	58.78	68.92	1.6	10	6/15/2020	216		1,010	XXX	XXX	XXX	XXX	78.4	Clear No odor
3	58.87	68.92	1.6	10	9/10/2020	288		1,040	XXX	XXX	XXX	XXX	57.4	Clear No odor
3	58.93	68.92	1.6	10	11/5/2020	276	257	995	XXX	XXX	XXX	XXX	61.6	Clear No odor
3	59.07	68.92	1.6	10	3/10/2021	276		968	XXX	XXX	XXX	XXX	58	Clear No odor
3	59.29	68.92	1.5	10	6/10/2021	280		1,070	XXX	XXX	XXX	XXX	64.2	Clear No odor
3	59.41	68.92	1.5	10	9/10/2021	324		1,220	XXX	XXX	XXX	XXX	84.1	Clear No odor
3	59.36	68.92	1.5	10	11/9/2021	304	296	1,120	XXX	XXX	XXX	XXX	69	Clear No odor
3	59.59	68.92	1.5	10	3/1/2022	300		1,010	XXX	XXX	XXX	XXX	69.5	Clear No odor
3	59.79	68.92	1.5	10	6/6/2022	328		1,090	XXX	XXX	XXX	XXX	78.9	Clear No odor
3	59.85	68.92	1.5	10	9/6/2022	316		1,110	XXX	XXX	XXX	XXX	76.2	Clear No odor
3	59.88	68.92	1.4	10	11/30/2022	308	313	1,070	XXX	XXX	XXX	XXX	49.8	Clear No odor

Table 2

ROC - Vacuum L-26 vent (1R425-66)
Unit Letter L, Section 26, T17S, R35E

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	60.07	68.92	1.4	6	3/16/2023	340		1,060	XXX	XXX	XXX	XXX	61.2	Clear No odor
3	60.22	68.92	1.4	6	6/2/2023	352		1,150	XXX	XXX	XXX	XXX	64	Clear No odor
3	60.34	68.92	1.4	6	8/16/2023	360		1,160	XXX	XXX	XXX	XXX	61.2	Clear No odor
3	60.38	68.92	1.4	6	10/12/2023	352	351	1,140	XXX	XXX	XXX	XXX	68.4	Clear No odor

Lab Reports

CARDINAL Laboratories

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

March 28, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM L-26 VENT

Enclosed are the results of analyses for samples received by the laboratory on 03/20/23 16:00.

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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	03/20/2023	Sampling Date:	03/16/2023
Reported:	03/28/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #1R (H231254-01)

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**450**	4.00	03/21/2023	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*	**55.2**	10.0	03/21/2023	ND	23.0	115	20.0	3.59	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**993**	5.00	03/28/2023	ND	833	83.3	1000	9.95	

Sample ID: MONITOR WELL #2 (H231254-02)

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**108**	4.00	03/21/2023	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*	**61.9**	10.0	03/21/2023	ND	23.0	115	20.0	3.59	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**568**	5.00	03/27/2023	ND	833	83.3	1000	9.95	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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:	03/20/2023	Sampling Date:	03/16/2023
Reported:	03/28/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H231254-03)

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**340**	4.00	03/21/2023	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*	**61.2**	10.0	03/21/2023	ND	23.0	115	20.0	3.59	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1060**	5.00	03/28/2023	ND	833	83.3	1000	9.95	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company — PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 — Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #: — Project Name: Vacuum L-26 Vent	
Project Location: T17S-R35E-Sec26 L ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY): H231254

	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL (4 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2023)	TIME
1	Monitor Well #1R	G	1	X									1		3/16	13:00
2	Monitor Well #2	G	1	X									1		3/16	9:00
3	Monitor Well #3	G	1	X									1		3/16	10:45

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
																		X	X	X	
																		X	X	X	
																		X	X	X	

Relinquished by: Rozanne Johnson	Date: 3/20/2023	Time: 14:40	Received by:	Date: 3/20/2023 Time: 14:41
Relinquished by:	Date: 3/20/2023	Time:	Received By: (Laboratory Staff)	Date: Time: 1000

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ☐ No ☐ — Intact: Yes ☑ No ☐

CHECKED BY: (Initials) JO.

Phone Results	☐	Yes	☐	No
Fax Results	☐	Yes	☐	No Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

Lab Reports

CARDINAL Laboratories

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

June 13, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM L-26 VENT

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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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:	06/02/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #1R (H232873-01)

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**240**	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*	**62.0**	10.0	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*	**833**	5.00	06/09/2023	ND	835	83.5	1000	1.52	

Sample ID: MONITOR WELL #2 (H232873-02)

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**148**	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*	**57.1**	10.0	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*	**597**	5.00	06/09/2023	ND	835	83.5	1000	1.52	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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:	06/02/2023
Reported:	06/13/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H232873-03)

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**352**	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*	**64.0**	10.0	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*	**1150**	5.00	06/09/2023	ND	835	83.5	1000	1.52	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company

BILL TO Company: RICE Operating Company PO#

Project Manager: Katie Jones

Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240

Phone#: (575) 393-9174 Fax#: (575)397-1471

Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240

Phone #: (575) 393-9174 Fax #: (575) 397-1471

Project #: Project Name: Vacuum L-26 Vent

Project Location: T17S-R35E-Sec26 L ~ Lea County New Mexico

Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (4 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2023)	TIME
H232873-1	Monitor Well #1R	G	1	X								1		6/2	12:05
-2	Monitor Well #2	G	1	X								1		6/2	10:15
-3	Monitor Well #3	G	1	X								1		6/2	11:45

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
																		X	X	X	
																		X	X	X	
																		X	X	X	

Relinquished by: Rozanne Johnson Date: 6/6/2023 Time: 15:45

Received by: Tamara Oldaker Date: 6-6-23 Time: 1545

Relinquished by: Date: Time:

Received By: (Laboratory Staff) Date: Time:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No; Intact: Yes ✓ / No

CHECKED BY: (Initials) T.O.

Phone Results: Yes / No

Fax Results: Yes / No Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

Lab Reports

CARDINAL Laboratories

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: VACUUM L-26 VENT

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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/16/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #1R (H234524-01)

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**124**	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*	**56.9**	10.0	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*	**559**	5.00	08/25/2023	ND	543	109	500	1.59	

Sample ID: MONITOR WELL #2 (H234524-02)

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**136**	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*	**63.0**	10.0	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*	**581**	5.00	08/25/2023	ND	543	109	500	1.59	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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:	08/16/2023
Reported:	08/28/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H234524-03)

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**360**	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*	**61.2**	10.0	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*	**1160**	5.00	08/25/2023	ND	543	109	500	1.59	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # H234524

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Vacuum L-26 Vent
Project Location: T17S-R35E-Sec26 L ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (4 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2023)	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
H234524																																					
1	Monitor Well #1R	G	1	X								1		8/16	11:15																			X	X	X	
2	Monitor Well #2	G	1	X								1		8/16	9:00																			X	X	X	
3	Monitor Well #3	G	1	X								1		8/16	10:30																			X	X	X	

Relinquished by: Rozanne Johnson	Date: 8/21/2023	Time: 7:10	Received by:
Relinquished by:	Date: 8/21/2023	Time:	Received By: (Laboratory Staff) Rodriguez
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool Yes / Intact Yes	CHECKED BY: (Initials) SR	

Phone Results	Yes		No	
Fax Results	Yes		No	Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

Lab Reports

CARDINAL Laboratories

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

October 24, 2023

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM L-26 VENT

Enclosed are the results of analyses for samples received by the laboratory on 10/16/23 15:12.

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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/16/2023	Sampling Date:	10/12/2023
Reported:	10/24/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #1R (H235626-01)

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**252**	4.00	10/17/2023	ND	112	112	100	11.3	

Sulfate 375.4 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**68.6**	10.0	10/17/2023	ND	17.4	86.8	20.0	1.74	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**858**	5.00	10/19/2023	ND	490	98.0	500	1.48	

Sample ID: MONITOR WELL #2 (H235626-02)

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**96.0**	4.00	10/17/2023	ND	112	112	100	11.3	

Sulfate 375.4 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**73.8**	10.0	10/17/2023	ND	17.4	86.8	20.0	1.74	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**466**	5.00	10/19/2023	ND	490	98.0	500	1.48	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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:	10/16/2023	Sampling Date:	10/12/2023
Reported:	10/24/2023	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H235626-03)

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**352**	4.00	10/17/2023	ND	112	112	100	11.3	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**68.4**	10.0	10/17/2023	ND	17.4	86.8	20.0	1.74	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1140**	5.00	10/19/2023	ND	490	98.0	500	1.48	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Lab Reports

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Vacuum L-26 Vent
Project Location: T17S-R35E-Sec26 L ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY): H235626

LAB #	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (4 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2023)	TIME
1	Monitor Well #1R	G	1	X								1		10/12	11:15
2	Monitor Well #2	G	1	X								1		10/12	9:15
3	Monitor Well #3	G	1	X								1		10/12	10:50

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
																		X	X	X	
																		X	X	X	
																		X	X	X	

Relinquished by: Rozanne Johnson	Date: 10/16/2023	Time: 15:10	Received by:	Date: 10-16-23 Time: 1512
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date: Time:

Phone Results		Yes	No
Fax Results		Yes	No Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No ; Intact: Yes ✓ / No

CHECKED BY: (Initials) TB

Exhibit 1

From: OCDOnline@state.nm.us
To: Katie Jones
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 202306
Date: Tuesday, May 23, 2023 11:20:05 AM

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#) nAPP2110350096,
with the following conditions:

- **Review of 2022 Annual Groundwater Report: Content satisfactory 1. MW #1R had eight (8) consecutive quarters (CQ) below the allowable concentrations (AC) for chloride between 5/29/2014 to 2/25/2016 & fourteen between 5/23/2017 to 9/10/2020. 2. MW #1 and #1R combined had fifteen (15) CQ below the AC for total dissolved solids (TDS) between 8/24/2012 to 2/25/2016 & fourteen between 2/21/2017 to 11/05/2020. 3. MW #1 and #1R combined had all sampling events below the AC for sulfate. 3. MW #2 had all constituents of concern below the AC. 4. MW #3 had eight (8) CQ below the AC for chloride between 2/21/2017 to 11/14/2018. 5. MW #3 had eight (8) CQ below the AC for TDS between 5/23/2017 to 3/05/2019. 6. MW #3 - all sampling events below the AC for sulfate. 7. Depth to water has declined steadily since later part of 2011 to the present by approximately 3.5 feet. 8. Based on the above, OCD will approve closure with a properly requested submittal.**

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,
Nelson Velez
Environmental Specialist - Advanced
505-469-6146
Nelson.Velez@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

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 327882
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2023 Annual Report submitted for ROC, Vacuum L-26 Vent (1R425-66): content satisfactory 1. Continue to sample MW-1R, MW-2, and MW-3 until all COCs; sulfate, chloride, and TDS are below the WQCC human health standards in Title 20 of the NMAC. 2. If ROC believes that these COCs are naturally occurring in the geological area, this may be demonstrated by submitting a work plan to establish a background level by installing a monitoring well upgradient of the incident, in an undisturbed area. If the intent is to close the incident sooner, this may be an option, but it must be proposed. 3. Otherwise, please continue to submit groundwater monitoring reports with sampling occurring as prescribed and approved by the OCD. 4. Submit the 2024 groundwater monitoring report to OCD by--or before--April 1, 2025.	12/31/2024