

WV

L Peter Galusky, Jr PE

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

April 1, 2022

Bradford Billings

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

Re: **2021 Annual Report**
Rice Operating Company – Vacuum SWD System
Vacuum L-26 Vent (1R425-66) T17S, R35E, Section 26 (L)

Sent via E-mail

Mr. Billings:

This letter summarizes progress made over the past calendar year pursuant to the NMOCD approved Corrective Action Plan and Addendum of April 4th, 2011 for this site, which is operated by Rice Operating Company (ROC). The site is located approximately 2.5 miles east of Buckeye, New Mexico at T17S, R35E, Section 26, Unit L as shown on the Site Location Map (Appendix - Figure 1). The depth to groundwater (water table) averaged approximately 59 +/- ft below ground surface in 2021.

Background and Previous Work

In 2008, ROC conducted field investigation on the former junction box. Soil samples were collected at regular intervals, creating a 30 x 30 x 12 ft deep excavation. Based on this investigation, a 30x30-ft geo-synthetic liner was installed at approximately 4.5 to 5 ft bgs. The liner was padded with a 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.

Rice Operating Company – Vacuum L-26 Vent Annual Report

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 NMCOD and which recommended the installation of a near-source monitor well. A subsequent Corrective Action Plan and Addendum dated April 4th, 2011, was submitted to NMOCD which proposed the installation of a sub-surface synthetic liner to isolate and prevent the downward migration of elevated 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 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.

Results of Groundwater Monitoring

Results of groundwater sampling from 2009 through 2021 are given in the Appendix (Figure 3, Tables 1 & 2). Average annual groundwater chloride concentrations in the up-gradient monitor well (MW-2) have remained below 60 mg/l since sampling began in 2011 but were up from 40 mg/l in 2020 to 57 mg/l in 2021. Groundwater chloride concentrations in the down-gradient monitor well (MW-3) averaged 296 mg/l in 2021, up from 257 mg/l in 2020. Groundwater chloride concentrations in the near-source pumping well (MW-1R) averaged 203 mg/l in 2021, up from 152 mg/l in 2020. 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 27,481 bbls of groundwater have been withdrawn from MW-1R since pumping began in 2013 resulting in the removal of approximately 528 kg of groundwater chloride. The withdrawn groundwater has been used for a purposeful use.

Path Forward

It remains to be seen, and will require additional monitoring, if the uptick in groundwater chloride concentrations observed in 2021 continues, or if this is simply indicative of natural variation in contributing background levels. ROC will therefore continue quarterly sampling in 2022 and will continue groundwater recovery, if warranted.

Rice Operating Company – Vacuum L-26 Vent Annual Report

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 thus submit this report for your review and consideration.

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

Thank you.

Sincerely,

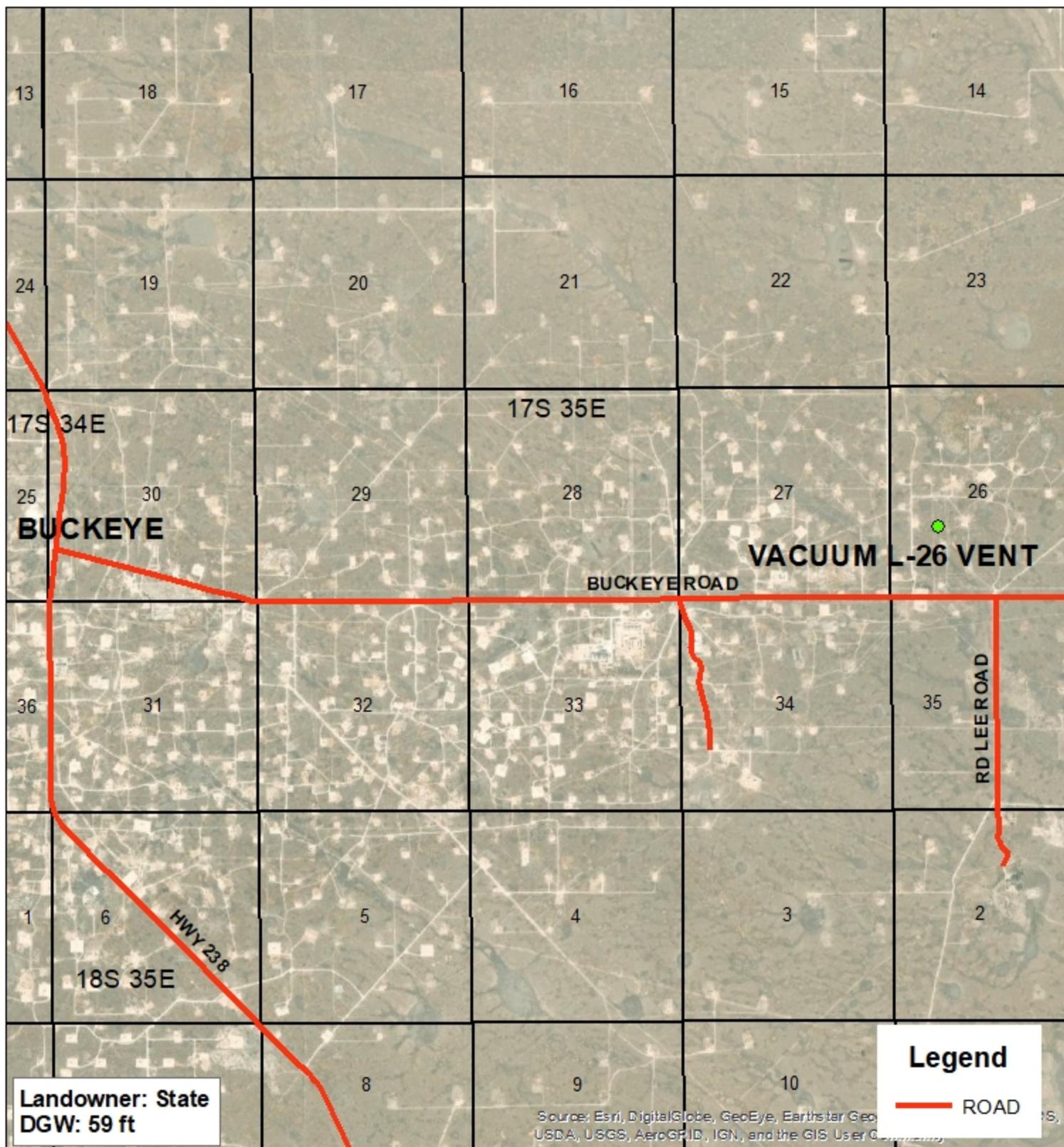


L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

Copy: Rice Operating Company

Attachments: ... as noted in text

Geographic Location



Landowner: State
 DGW: 59 ft

Legend

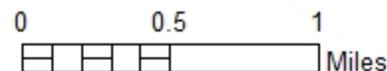
— ROAD



**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



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

Site Map



Legend

- MARKING PLATE
- X REMOVED BOX
- X REMOVED MW
- ◆ ACTIVE MW
- ROC ISOLATED LINE
- 30' x 30' FORMER GEOSYNTHETIC LINER INSTALLED @ 5 FT BGS
- 64 FT x 63 FT 20 MIL REINFORCED LINER INSTALLED @ 4.5 FT BGS

Landowner: State
DGW: 59 ft

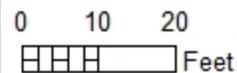


VACUUM L-26 VENT

1R425-66

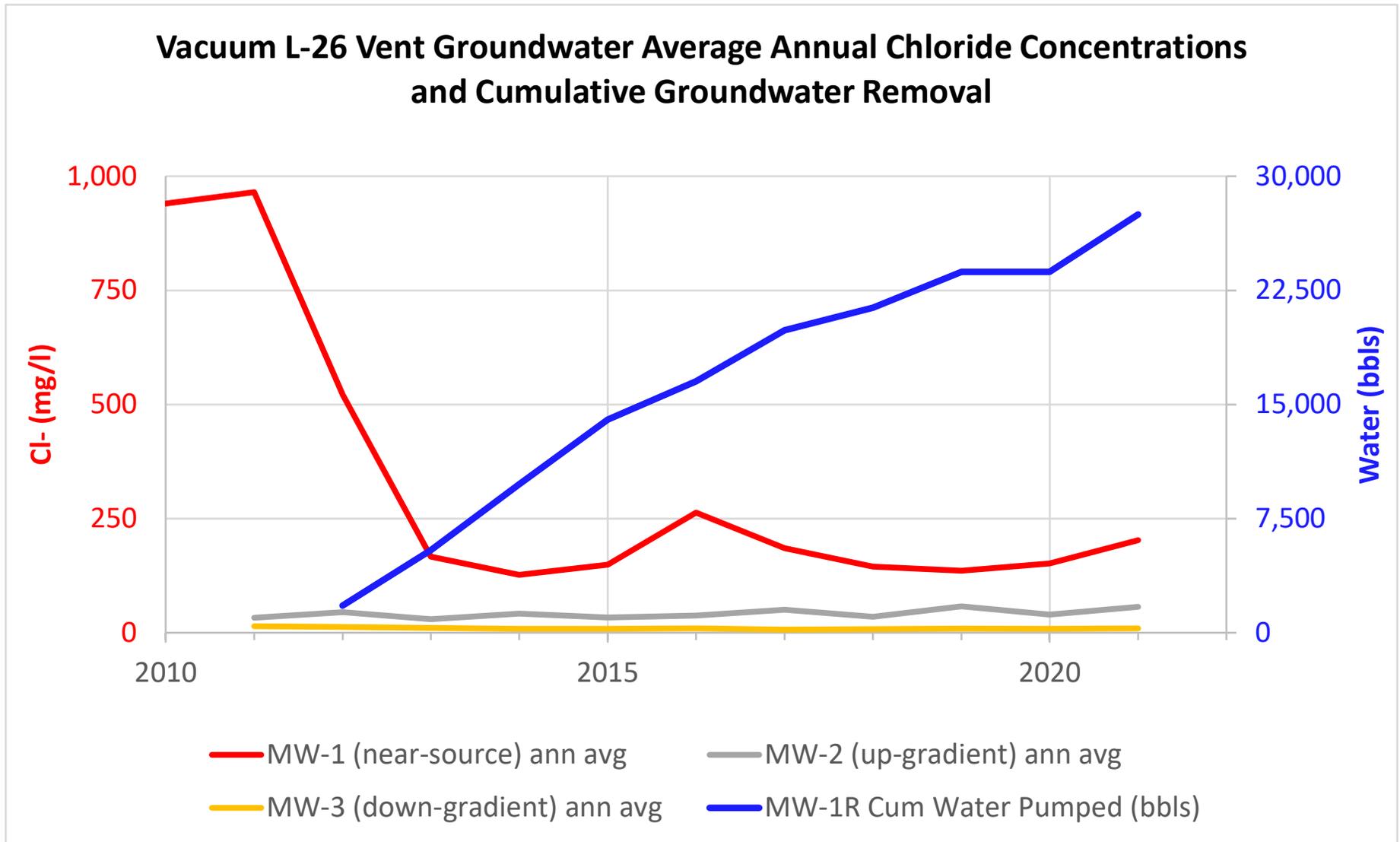
ULL SECTION 26
T-17-S R-35-E
LEA COUNTY, NM

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



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





**Vacuum L-26 Vent Groundwater Chloride Concentrations (mg/l)
 and Groundwater Withdrawal Data**

Date	MW-1R (near-source) ann avg	MW-2 (up- gradient) ann avg	MW-3 (down- gradient) ann avg	MW-1R Cum Water Pumped (bbls)	Cum kg Cl- Removed
2010	940				
2011	965	33	433		
2012	521	45	372	1,783	37
2013	167	30	309	5,424	97
2014	127	42	248	9,762	154
2015	149	34	250	14,007	259
2016	263	38	308	16,527	300
2017	185	51	218	19,897	361
2018	145	35	229	21,357	387
2019	136	58	268	23,717	439
2020	152	40	257	23,717	439
2021	203	57	296	27,481	528

ROC - Vacuum L-26 vent (1R425-66)
Groundwater Monitoring Data - Full Dataset

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
1	56.5	72.5	2.6	10	11/22/2010	940	2,120	<0.001	<0.001	<0.001	<0.003	79.6	Clear No odor
1	56.6	72.6	2.6	10	2/16/2011	960	2,130	<0.001	<0.001	<0.001	<0.003	64.0	Clear No odor
1	56.7	72.6	2.5	10	6/4/2011	1,040	2,710	<0.001	<0.001	<0.001	<0.003	64.7	Clear No odor
1	56.8	72.6	2.5	10	8/31/2011	940	2,440	<0.001	<0.001	<0.001	<0.003	67.0	Clear No odor
1	56.9	72.6	2.5	10	12/2/2011	920	2,230	<0.001	<0.001	<0.001	<0.003	73.7	Clear No odor
1	57.0	72.6	2.5	10	2/22/2012	970	1,930	<0.001	<0.001	<0.001	<0.003	66.3	Clear No odor
1	57.1	72.6	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	0.0	Pumping	8/24/2012	116	551	<0.001	<0.001	<0.001	<0.003	63.6	Clear No odor
1	XXX	XXX	0.0	Pumping	11/15/2012	288	960	<0.001	<0.001	<0.001	<0.003	59.5	Clear No odor
1	XXX	XXX	0.0	Pumping	2/12/2013	300	958	<0.001	<0.001	<0.001	<0.003	55.1	Clear No odor
1R	XXX	XXX	0.0	Pumping	5/30/2013	140	651	<0.001	<0.001	<0.001	<0.003	60.0	Clear No odor
1R	XXX	XXX	0.0	Pumping	9/6/2013	148	692	<0.001	<0.001	<0.001	<0.003	50.2	Clear No odor
1R	XXX	XXX	0.0	Pumping	11/19/2013	80	446	<0.001	<0.001	<0.001	<0.003	58.7	Clear No odor
1R	XXX	XXX	0.0	90	3/5/2014	256	806	<0.001	<0.001	<0.001	<0.003	58.6	Clear No odor
1R	XXX	XXX	0.0	Pumping	5/29/2014	88	490	<0.001	<0.001	<0.001	<0.003	59.3	Clear No odor
1R	XXX	XXX	0.0	Pumping	8/20/2014	80	468	<0.001	<0.001	<0.001	<0.003	56.4	Clear No odor
1R	XXX	XXX	0.0	90	11/20/2014	84	498	<0.001	<0.001	<0.001	<0.003	53.7	Clear No odor
1R	XXX	XXX	0.0	90	3/2/2015	140	644	<0.001	<0.001	<0.001	<0.003	46.9	Clear No odor
1R	XXX	XXX	0.0	Pumping	6/2/2015	44	590	<0.001	<0.001	<0.001	<0.003	37.2	Clear No odor
1R	XXX	XXX	0.0	Pumping	8/20/2015	196	676	<0.001	<0.001	<0.001	<0.003	42.0	Clear No odor
1R	XXX	XXX	0.0	Pumping	11/10/2015	216	654	<0.001	<0.001	<0.001	<0.003	47.0	Clear No odor
1R	XXX	XXX	XXX	100	2/25/2016	200	640	<0.001	<0.001	<0.001	<0.003	60.0	Clear No odor
1R	XXX	XXX	XXX	100	5/18/2016	408	1,270	<0.001	<0.001	<0.001	<0.003	112.0	Clear No odor
1R	XXX	XXX	XXX	Running	9/12/2016	88	442	<0.001	<0.001	<0.001	<0.003	61.0	Clear No odor
1R	XXX	XXX	XXX	100	11/11/2016	356	1,140	<0.001	<0.001	<0.001	<0.003	56.0	Clear No odor
1R	XXX	XXX	XXX	100	2/21/2017	264	998	<0.001	<0.001	<0.001	<0.003	58.0	Clear No odor
1R	XXX	XXX	XXX	Running	5/23/2017	208	944	<0.001	<0.001	<0.001	<0.003	55.0	Clear No odor
1R	XXX	XXX	XXX	Running	9/8/2017	108	684	<0.001	<0.001	<0.001	<0.003	58.0	Clear No odor
1R	XXX	XXX	XXX	100	11/29/2017	160	796	<0.001	<0.001	<0.001	<0.003	56.0	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	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	54.0	Clear No odor
1R	XXX	XXX	XXX	Running	5/28/2019	140	583	<0.001	<0.001	<0.001	<0.003	55.0	Clear No odor
1R	XXX	XXX	XXX	Running	8/29/2019	144	650	<0.001	<0.001	<0.001	<0.003	54.0	Clear No odor
1R	XXX	XXX	XXX	100	11/15/2019	100	765	<0.001	<0.001	<0.001	<0.003	46.0	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	972	XXX	XXX	XXX	XXX	69.0	Clear No odor
1R	XXX	XXX	XXX	100	3/10/2021	240	1050	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	57.0	Clear No odor
1R	XXX	XXX	XXX	100	11/9/2021	240	978	XXX	XXX	XXX	XXX	64.6	Clear No odor

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
2	56.8	62.8	1.0	10	6/4/2011	32	457	<0.001	<0.001	<0.001	<0.003	37.0	Clear No odor
2	56.9	62.8	0.9	10	8/31/2011	32	374	<0.001	<0.001	<0.001	<0.003	33.5	Clear No odor
2	57.0	62.8	0.9	10	12/2/2011	36	405	<0.001	<0.001	<0.001	<0.003	40.8	Clear No odor
2	57.1	62.8	0.9	10	2/22/2012	92	408	<0.001	<0.001	<0.001	<0.003	41.6	Clear No odor
2	57.2	62.8	0.9	10	5/29/2012	28	411	<0.001	<0.001	<0.001	<0.003	41.4	Clear No odor
2	57.4	62.8	0.9	10	8/24/2012	28	490	<0.001	<0.001	<0.001	<0.003	27.7	Clear No odor
2	54.5	62.8	1.3	10	11/15/2012	32	518	<0.001	<0.001	<0.001	<0.003	20.3	Clear No odor
2	57.5	62.8	0.8	10	2/12/2013	28	573	<0.001	<0.001	<0.001	<0.003	28.7	Clear No odor
2	57.6	62.8	0.8	10	5/30/2013	32	611	<0.001	<0.001	<0.001	<0.003	28.7	Clear No odor
2	57.8	62.8	0.8	10	9/6/2013	32	646	<0.001	<0.001	<0.001	<0.003	31.0	Clear No odor
2	57.8	62.8	0.8	10	11/19/2013	28	587	<0.001	<0.001	<0.001	<0.003	32.2	Clear No odor
2	57.9	62.8	0.8	10	3/5/2014	32	308	<0.001	<0.001	<0.001	<0.003	61.2	Clear No odor
2	58.0	62.8	0.8	10	5/29/2014	72	454	<0.001	<0.001	<0.001	<0.003	51.9	Clear No odor
2	58.0	62.8	0.8	10	8/19/2014	32	558	<0.001	<0.001	<0.001	<0.003	32.9	Clear No odor
2	57.2	62.8	0.9	10	11/20/2014	32	526	<0.001	<0.001	<0.001	<0.003	31.3	Clear No odor
2	57.1	62.8	0.9	10	3/2/2015	32	546	<0.001	<0.001	<0.001	<0.003	28.2	Clear No odor
2	54.4	62.8	1.3	10	6/2/2015	32	586	<0.001	<0.001	<0.001	<0.003	40.7	Clear No odor
2	57.6	62.8	0.8	10	8/20/2015	36	546	<0.001	<0.001	<0.001	<0.003	35.4	Clear No odor
2	57.8	62.8	0.8	8	11/10/2015	36	510	<0.001	<0.001	<0.001	<0.003	38.6	Clear No odor
2	58.0	62.8	0.8	8	2/25/2016	52	496	<0.001	<0.001	<0.001	<0.003	49.0	Clear No odor
2	58.1	62.8	0.8	6	5/18/2016	28	564	<0.001	<0.001	<0.001	<0.003	48.0	Clear No odor
2	58.2	62.8	0.7	6	9/12/2016	40	432	<0.001	<0.001	<0.001	<0.003	44.0	Clear No odor
2	58.2	62.8	0.7	8	11/11/2016	32	444	<0.001	<0.001	<0.001	<0.003	41.0	Clear No odor
2	58.3	62.8	0.7	10	2/21/2017	40	490	<0.001	<0.001	<0.001	<0.003	44.0	Clear No odor
2	57.6	62.8	0.7	10	5/23/2017	96	512	<0.001	<0.001	<0.001	<0.003	56.0	Clear No odor
2	58.5	62.8	0.7	10	9/8/2017	36	628	<0.001	<0.001	<0.001	<0.003	51.0	Clear No odor
2	58.5	62.8	0.7	10	11/29/2017	32	638	<0.001	<0.001	<0.001	<0.003	47.0	Clear No odor
2	58.6	62.8	0.7	6	2/27/2018	40	622	<0.001	<0.001	<0.001	<0.003	46.9	Clear No odor
2	58.6	62.8	0.7	6	5/16/2018	32	606	<0.001	<0.001	<0.001	<0.003	50.3	Clear No odor
2	58.7	62.8	0.6	6	9/6/2018	32	532	<0.001	<0.001	<0.001	<0.003	50.1	Clear No odor
2	58.8	62.8	0.6	6	11/14/2018	36	664	<0.001	<0.001	<0.001	<0.003	52.2	Clear No odor
2	58.9	62.8	0.6	6	3/5/2019	32	512	<0.001	<0.001	<0.001	<0.003	48.0	Clear No odor
2	59.0	62.8	0.6	6	5/28/2019	28	673	<0.001	<0.001	<0.001	<0.003	48.0	Clear No odor

2	59.2	62.8	0.6	6	8/29/2019	144	622	<0.001	<0.001	<0.001	<0.003	53.0	Clear No odor
2	59.2	62.8	0.6	6	11/15/2019	28	606	<0.001	<0.001	<0.001	<0.003	47.0	Clear No odor
2	59.3	62.8	0.6	6	3/5/2020	32	669	<0.001	<0.001	<0.001	<0.003	48.7	Clear No odor
2	59.5	62.8	0.5	6	6/15/2020	72	793	XXX	XXX	XXX	XXX	53.8	Clear No odor
2	59.6	62.8	0.5	6	9/10/2020	24	686	XXX	XXX	XXX	XXX	43.4	Clear No odor
2	59.6	62.8	0.5	6	11/5/2020	32	560	XXX	XXX	XXX	XXX	68.1	Clear No odor
2	59.7	62.8	0.5	6	3/10/2021	28	668	XXX	XXX	XXX	XXX	49.1	Clear No odor
2	59.9	62.8	0.5	6	6/10/2021	32	700	XXX	XXX	XXX	XXX	52.4	Clear No odor
2	60.0	62.8	0.4	6	9/10/2021	128	580	XXX	XXX	XXX	XXX	52.3	Clear No odor
2	60.0	62.8	0.5	6	11/9/2021	40	658	XXX	XXX	XXX	XXX	55.4	Clear No odor

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
3	56.1	68.9	2.0	10	6/4/2011	432	1,210	<0.001	<0.001	<0.001	<0.003	69.1	Clear No odor
3	52.2	68.9	2.7	10	8/31/2011	416	1,250	<0.001	<0.001	<0.001	<0.003	47.3	Clear No odor
3	56.3	68.9	2.0	10	12/2/2011	450	1,330	<0.001	<0.001	<0.001	<0.003	56.8	Clear No odor
3	56.4	68.9	2.0	10	2/22/2012	332	1,330	<0.001	<0.001	<0.001	<0.003	54.9	Clear No odor
3	56.6	68.9	2.0	10	5/29/2012	380	1,220	<0.001	<0.001	<0.001	<0.003	57.4	Clear No odor
3	56.7	68.9	1.9	10	8/24/2012	400	1,220	<0.001	<0.001	<0.001	<0.003	48.9	Clear No odor
3	56.8	68.9	1.9	10	11/15/2012	376	1,240	<0.001	<0.001	<0.001	<0.003	48.7	Clear No odor
3	56.8	68.9	1.9	10	2/12/2013	352	1,260	<0.001	<0.001	<0.001	<0.003	52.6	Clear No odor
3	56.9	68.9	1.9	10	5/30/2013	320	1,220	<0.001	<0.001	<0.001	<0.003	49.0	Clear No odor
3	56.9	68.9	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	69.9	1.9	10	11/19/2013	272	1,150	<0.001	<0.001	<0.001	<0.003	45.1	Clear No odor
3	57.2	68.9	1.9	10	3/5/2014	256	984	<0.001	<0.001	<0.001	<0.003	47.0	Clear No odor
3	57.3	68.9	1.9	10	5/29/2014	248	826	<0.001	<0.001	<0.001	<0.003	86.2	Clear No odor
3	57.3	68.9	1.9	10	08.19.14	236	1,090	<0.001	<0.001	<0.001	<0.003	38.7	Clear No odor
3	56.5	68.9	2.0	10	11/20/2014	252	1,030	<0.001	<0.001	<0.001	<0.003	32.4	Clear No odor
3	56.4	68.9	2.0	10	03.02.15	252	1,030	<0.001	<0.001	<0.001	<0.003	42.0	Clear No odor
3	56.8	68.9	1.9	10	6/2/2015	268	1,060	<0.001	<0.001	<0.001	<0.003	45.3	Clear No odor
3	57.0	68.9	1.9	10	8/20/2015	164	1,100	<0.001	<0.001	<0.001	<0.003	47.5	Clear No odor
3	57.2	68.9	1.9	10	11/10/2015	316	1,090	<0.001	<0.001	<0.001	<0.003	50.5	Clear No odor
3	57.3	68.9	1.9	10	2/25/2016	320	1,160	<0.001	<0.001	<0.001	<0.003	49.0	Clear No odor
3	57.4	68.9	1.8	8	5/18/2016	324	1,180	<0.001	<0.001	<0.001	<0.003	62.2	Clear No odor
3	57.5	68.9	1.8	10	9/12/2016	296	1,150	<0.001	<0.001	<0.001	<0.003	53.0	Clear No odor
3	57.5	68.9	1.8	10	11/11/2016	292	1,050	<0.001	<0.001	<0.001	<0.003	44.0	Clear No odor
3	57.6	68.9	1.8	10	2/21/2017	200	1,380	<0.001	<0.001	<0.001	<0.003	43.0	Clear No odor
3	57.6	68.9	1.8	10	5/23/2017	220	980	<0.001	<0.001	<0.001	<0.003	59.0	Clear No odor
3	57.9	68.9	1.8	10	9/8/2017	204	942	<0.001	<0.001	<0.001	<0.003	59.0	Clear No odor
3	57.9	68.9	1.8	10	11/29/2017	248	930	<0.001	<0.001	<0.001	<0.003	55.0	Clear No odor
3	57.9	68.9	1.8	10	2/27/2018	208	766	<0.001	<0.001	<0.001	<0.003	51.3	Clear No odor
3	57.9	68.9	1.8	10	5/16/2018	248	962	<0.001	<0.001	<0.001	<0.003	57.7	Clear No odor
3	58.1	68.9	1.7	10	9/6/2018	224	916	<0.001	<0.001	<0.001	<0.003	53.4	Clear No odor
3	58.1	68.9	1.7	10	11/14/2018	236	856	<0.001	<0.001	<0.001	<0.003	57.4	Clear No odor
3	58.2	68.9	1.7	10	3/5/2019	268	968	<0.001	<0.001	<0.001	<0.003	57.0	Clear No odor

3	58.4	68.9	1.7	10	5/28/2019	260	1010	<0.001	<0.001	<0.001	<0.003	60.0	Clear No odor
3	58.2	68.9	1.7	10	8/29/2019	256	938	<0.001	<0.001	<0.001	<0.003	54.0	Clear No odor
3	58.6	68.9	1.7	10	11/15/2019	286	1020	<0.001	<0.001	<0.001	<0.003	56.0	Clear No odor
3	58.7	68.9	1.6	10	3/5/2020	248	1000	<0.001	<0.001	<0.001	<0.003	64.4	Clear No odor
3	58.8	68.9	1.6	10	6/15/2020	216	1010	XXX	XXX	XXX	XXX	78.4	Clear No odor
3	58.9	68.9	1.6	10	9/10/2020	288	1040	XXX	XXX	XXX	XXX	57.4	Clear No odor
3	58.9	68.9	1.6	10	11/5/2020	276	995	XXX	XXX	XXX	XXX	61.6	Clear No odor
3	59.1	68.9	1.6	10	3/10/2021	276	968	XXX	XXX	XXX	XXX	58.0	Clear No odor
3	59.3	68.9	1.5	10	6/10/2021	280	1070	XXX	XXX	XXX	XXX	64.2	Clear No odor
3	59.4	68.9	1.5	10	9/10/2021	324	1220	XXX	XXX	XXX	XXX	84.1	Clear No odor
3	59.4	68.9	1.5	10	11/9/2021	304	1120	XXX	XXX	XXX	XXX	69.0	Clear No odor



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

March 22, 2021

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 03/16/21 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. 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 with a large, flowing "C" at the beginning.

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:	03/16/2021	Sampling Date:	03/10/2021
Reported:	03/22/2021	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 (H210658-01)

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	03/17/2021	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*	57.7	10.0	03/17/2021	ND	19.2	96.0	20.0	14.2		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	1050	5.00	03/19/2021	ND	546	109	500	2.49		

Sample ID: MONITOR WELL #2 (H210658-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	28.0	4.00	03/17/2021	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*	49.1	10.0	03/17/2021	ND	19.2	96.0	20.0	14.2		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	668	5.00	03/19/2021	ND	546	109	500	2.49		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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:	03/16/2021	Sampling Date:	03/10/2021
Reported:	03/22/2021	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 (H210658-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	276	4.00	03/17/2021	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*	58.0	10.0	03/17/2021	ND	19.2	96.0	20.0	14.2	
TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	968	5.00	03/19/2021	ND	546	109	500	2.49	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Cardinal Laboratories, Inc.

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: **RICE Operating Company**
 Project Manager: **Katie Jones**
 Address: (Street, City, Zip) **122 W Taylor Street ~ Hobbs, New Mexico 88240**
 Phone #: **(575) 393-9174**
 Fax #: **(575) 397-1471**

BILL TO Company: **RICE Operating Company**
 PO#
 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 Order ID # _____

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD				SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCL (4 40ml VOA)	HNO ₃	NaHSO ₄	H ₂ SO ₄	ICE (1-1 Liter HDPE)	NONE
1	Monitor Well #1R	G	1	X								3/10	15:45
2	Monitor Well #2	G	1	X								3/10	10:50
3	Monitor Well #3	G	1	X								3/10	12:25

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, SO ₄ , CO ₃ , HCO ₃)	
Sulfates	
Total Dissolved Solids	X X X
Chlorides	X X X
Turn Around Time ~ 24 Hours	

Relinquished by: *Rozanne Johnson* Date: *3/16/21* Time: *12:55*
 Received by: *Samora* Date: *3/16/21* Time: *1300*

Relinquished by: _____ Date: _____ Time: _____
 Received by: (Laboratory Staff) Date: _____ Time: _____

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

Delivered By: (Circle One) Sampler - UPS - Bus - Other:
 Sample Condition: Cool Intact
 Yes No Checked by: *Y.O.* (Initials)

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



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

June 21, 2021

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 06/15/21 13:31.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. 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:	06/15/2021	Sampling Date:	06/10/2021
Reported:	06/21/2021	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #1R (H211523-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	148	4.00	06/16/2021	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	57.5	10.0	06/16/2021	ND	21.4	107	20.0	12.4		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	637	5.00	06/18/2021	ND	532	106	500	2.99		

Sample ID: MONITOR WELL #2 (H211523-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	32.0	4.00	06/16/2021	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	52.4	10.0	06/16/2021	ND	21.4	107	20.0	12.4		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	700	5.00	06/17/2021	ND	532	106	500	2.99		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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:	06/15/2021	Sampling Date:	06/10/2021
Reported:	06/21/2021	Sampling Type:	Water
Project Name:	VACUUM L-26 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC26 L-LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H211523-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	280	4.00	06/16/2021	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	64.2	10.0	06/16/2021	ND	21.4	107	20.0	12.4		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	1070	5.00	06/17/2021	ND	532	106	500	2.99		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

September 20, 2021

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 09/15/21 15:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. 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 with a large, flowing "C" and "K".

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:	09/15/2021	Sampling Date:	09/10/2021
Reported:	09/20/2021	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 (H212561-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	184	4.00	09/16/2021	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*	57.0	10.0	09/16/2021	ND	23.0	115	20.0	16.4		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	749	5.00	09/17/2021	ND	268	89.3	300	1.07		

Sample ID: MONITOR WELL #2 (H212561-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	128	4.00	09/16/2021	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*	52.3	10.0	09/16/2021	ND	23.0	115	20.0	16.4		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	580	5.00	09/17/2021	ND	268	89.3	300	1.07		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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:	09/15/2021	Sampling Date:	09/10/2021
Reported:	09/20/2021	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 (H212561-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	324	4.00	09/16/2021	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*	84.1	25.0	09/16/2021	ND	23.0	115	20.0	16.4	
TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	1220	5.00	09/17/2021	ND	268	89.3	300	1.07	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

November 18, 2021

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 11/15/21 14:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. 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:	11/15/2021	Sampling Date:	11/09/2021
Reported:	11/18/2021	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 (H213249-01)

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	11/16/2021	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	64.6	10.0	11/18/2021	ND	22.1	110	20.0	7.07	QM-07	
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	978	5.00	11/17/2021	ND	512	102	500	1.51		

Sample ID: MONITOR WELL #2 (H213249-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	40.0	4.00	11/16/2021	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	55.4	10.0	11/18/2021	ND	22.1	110	20.0	7.07		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	658	5.00	11/17/2021	ND	512	102	500	1.51		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

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:	11/15/2021	Sampling Date:	11/09/2021
Reported:	11/18/2021	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 (H213249-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	304	4.00	11/16/2021	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	69.0	10.0	11/18/2021	ND	22.1	110	20.0	7.07		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	1120	5.00	11/17/2021	ND	512	102	500	1.51		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS
 Action 90583

CONDITIONS

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 90583
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. Please see App ID 202306 for most updated status.	5/23/2023