

# RICE Operating Company

112 West Taylor • Hobbs, New Mexico 88240

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

**REVIEWED**

By Mike Buchanan at 2:00 pm, Jul 07, 2023

April 1, 2023

## Nelson Velez

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

Review of the 2022 Annual Groundwater Report for ROC BD F-29 and F-29-1:

### Content Satisfactory

1. Continue to groundwater sample quarterly.
2. Submit the 2023 Annual Groundwater Report by April 1, 2024.

RE: **2022 Annual Groundwater Report  
Rice Operating Company – BD SWD System  
BD F-29 (1R426-16) and F-29-1 (1R426-15): UL/F, Sec. 29, T21S, R37E**

Mr. Velez:

ROC is the service provider (agent) for the BD 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.

## Background and Previous Work

The BD F-29 site is located 25 ft south from the BD F-29-1 site. These sites are located approximately 1.5 miles northwest of Eunice, New Mexico at UL/F, Sec. 29, T21S, R37E as shown on the Geographical Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 99 feet below ground surface (bgs).

### BD F-29 Backhoe Delineation

In 2003, ROC initiated work on the former BD F-29 junction box. The site was delineated using a backhoe to form a 25x10x14-ft deep excavation and soil samples were screened at regular intervals for both hydrocarbon and chloride. From the excavation, the four-wall composite and the bottom composite were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite and the bottom composite resulted in elevated chloride concentrations. TPH concentrations were low and BTEX concentrations were below detectable limits. The site was backfilled, the area was contoured to the surrounding area, and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on March 26<sup>th</sup>, 2003 and a junction box disclosure report was submitted to NMOCD with all the 2003 junction box closures and disclosures.

### BD F-29-1 Backhoe Delineation

In 2003, ROC initiated work on the former BD F-29-1 junction. The site was delineated using a backhoe to form a 20x10x6-ft deep excavation and soil samples were screened at regular intervals for both hydrocarbon and chloride. From the excavation, the bottom composite was

taken to a commercial laboratory for analysis. Laboratory testing on the bottom composite showed a chloride laboratory reading of 1,060 mg/kg, a GRO reading of non-detect and a DRO reading of 26.6 mg/kg. BTEX readings returned a result of non-detect. The site was backfilled, the area was contoured to the surrounding area, and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on March 26<sup>th</sup>, 2003 and a junction box closure report was submitted to NMOCD with all the 2003 junction box closures and disclosures.

An Investigation and Characterization Plan (ICP) was submitted to NMOCD September 30<sup>th</sup>, 2013. According to the ICP, a total of 18 soil bores were drilled at the two sites. As the bores were advanced, soil samples were taken at regular intervals and field tested for chloride and hydrocarbon. Representative samples from each bore were taken to a commercial laboratory for analysis. The interior bores (soil bores 1-9, 11 and 14-16) located close to the former boxes, showed evidence of elevated chlorides throughout each bore. Although the laboratory chloride readings decrease with depth in each bore, the bottom samples at 95 ft bgs are still above 250 mg/kg. The most outer bores (soil bores 12, 13, 17 and SB-18) showed laboratory chloride readings that decrease to below 250 mg/kg before reaching the capillary fringe. GRO and DRO readings were non-detect in all bores at all depths. All borings were plugged with bentonite to ground surface.

According to a Corrective Action Plan (CAP) approved by the NMOCD on October 30<sup>th</sup>, 2013, ROC installed a 20-mil reinforced liner measuring 247x106-ft at a depth of 4.5 ft bgs. The liner extended 5 ft beyond the furthest soil bores and will provide a barrier that will inhibit the downward migration of chlorides to the groundwater. The soils placed above the liner had a laboratory chloride reading of 240 mg/kg and 320 mg/kg, and field PID readings of 0.4 ppm and 1.2 ppm. Upon completion of backfilling, the site was seeded with a native vegetative mix and soil amendments. A CAP Report and Soil Closure Request summarizing this work was submitted to NMOCD on July 23<sup>rd</sup>, 2014, and NMOCD granted Soil Closure on September 18<sup>th</sup>, 2014.

On November 13<sup>th</sup>, 2018, a near-source monitor well (MW-1) was installed approximately 70 ft southeast of the former junction boxes. On December 10<sup>th</sup>, 2018, an up-gradient well (MW-2) was installed approximately 133 ft northwest and a down-gradient well (MW-3) was installed approximately 170 ft southeast of the former junction boxes. These wells were developed and have been sampled regularly. The most recent sampling event resulted in a chloride concentration of 500 mg/L in MW-1, 210 mg/L in MW-2, and 332 mg/L in MW-3. BTEX concentrations remained below detectable limits since the wells were installed. In 2020, ROC received NMOCD approval to cease BTEX sampling. On February 4<sup>th</sup>, 2022, and again on December 13<sup>th</sup>, 2022, NMOCD granted approval to cease sampling in the up-gradient well, MW-2. NMOCD also granted approval to cease sulfate analysis in MW-1, MW-2, and MW-3. ROC will continue to grab samples from MW-2, as needed, to ensure there are no non-ROC, up-gradient sources contributing to the degradation of groundwater quality. ROC will continue quarterly sampling in 2023.

Attached is the Appendix, which contains:

1. A Geographical Location Map.

2. A map showing well locations.
3. A table presenting all laboratory results and depth to groundwater for each well at the site, and a graph showing laboratory results.
4. The laboratory analytical results for 2022.

Rice Operating Company appreciates the opportunity to work with you on this project. Please contact me at (575) 393-9174 if you have any questions or wish to further discuss this site. Thank you for your time and consideration.

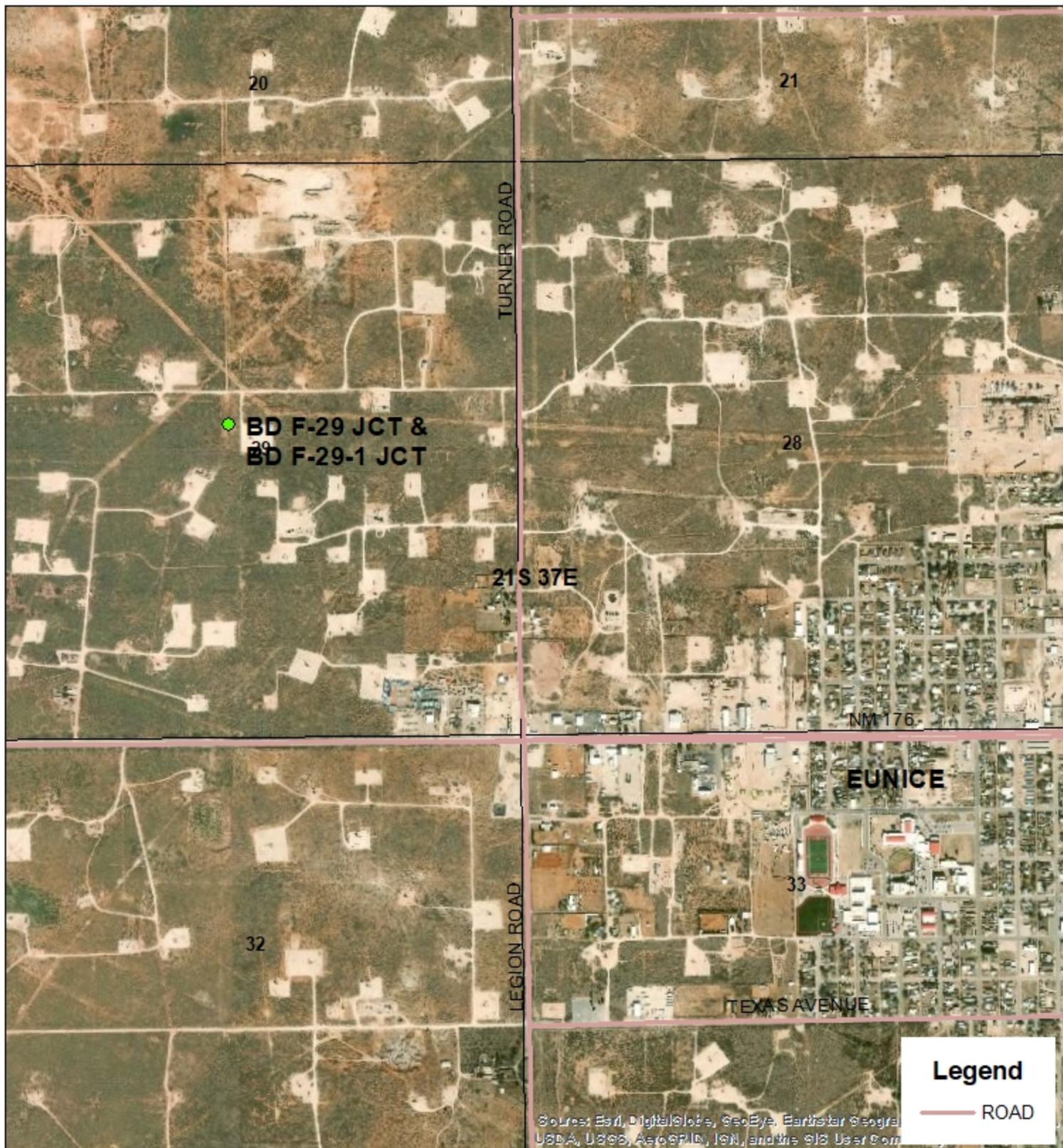
Sincerely,

A handwritten signature in black ink that reads "Katie Davis". The signature is written in a cursive, flowing style.

Katie Davis  
Environmental Manager  
RICE Operating Company (ROC)

appendix

# Geographical Location Map



**BD F-29 JCT**  
 1R426-16  
**BD F-29-1 JCT**  
 1R426-15  
 UL F SECTION 29  
 T-21-S R-37-E  
 LEA COUNTY, NM

GPS:  
 F-29 JCT: 32.450545 - 103.185153  
 F-29-1 JCT: 32.450619 - 103.185157  
 NAD 83 STATE PLANE PROJ.  
 NM EAST ZONE

0 1,000 2,000

Feet



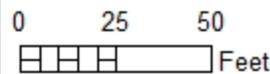
Drawing date: 1/28/20  
 Drafted by: T. Grieco

# Monitor Well Location



**BD**  
**F-29 & F-29-1 JCT**  
 1R426-16 & 1R426-15  
 UL F & G SECTION 29  
 T-21-S R-37-E  
 LEA COUNTY, NM

GPS: 32.450619 -103.185159  
 NAD83 STATE PLANE PROJECTION  
 NEW MEXICO EAST ZONE



Drawing date: 6/25/19  
 Drafted by: T. Grieco



## ROC - BD F-29 (1R426-16) &amp; F-29-1 (1R426-15)

## Unit Letter F, Section 29, T21S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	99.48	116.15	10.9	35	12/26/2018	484	1,300	<0.001	<0.001	<0.001	<0.003	278	Clear No odor
1	99.45	116.15	10.9	35	2/25/2019	500	1,230	<0.001	<0.001	<0.001	<0.003	251	Clear No odor
1	99.44	116.15	10.9	35	5/6/2019	468	976	<0.001	<0.001	<0.001	<0.003	238	Clear No odor
1	99.42	116.15	10.9	35	8/20/2019	468	1,300	<0.001	<0.001	<0.001	<0.003	211	Clear No odor
1	99.44	116.15	10.9	35	11/6/2019	400	1,200	<0.001	<0.001	<0.001	<0.003	208	Clear No odor
1	99.43	116.15	10.9	35	2/21/2020	416	1,140	<0.0005	<0.0005	<0.0005	<0.002	125	Clear No odor
1	99.4	116.15	10.9	35	8/28/2020	440	1,290	XXX	XXX	XXX	XXX	218	Clear No odor
1	99.37	116.15	10.9	35	3/2/2021	424	1,250	XXX	XXX	XXX	XXX	234	Clear No odor
1	99.4	116.15	10.9	35	5/28/2021	364	1,140	XXX	XXX	XXX	XXX	216	Clear No odor
1	99.38	116.15	10.9	35	8/31/2021	368	1,200	XXX	XXX	XXX	XXX	303	Clear No odor
1	99.37	116.15	10.9	35	11/1/2021	360	1,160	XXX	XXX	XXX	XXX	301	Clear No odor
1	99.41	116.15	10.9	35	2/21/2022	424	918	XXX	XXX	XXX	XXX	294	Clear No odor
1	99.32	116.15	10.9	35	5/20/2022	416	1,230	XXX	XXX	XXX	XXX	XXX	Clear No odor
1	99.34	116.15	10.9	35	8/26/2022	432	1,230	XXX	XXX	XXX	XXX	XXX	Clear No odor
1	99.35	116.15	10.9	35	11/8/2022	500	1,340	XXX	XXX	XXX	XXX	XXX	Clear No odor

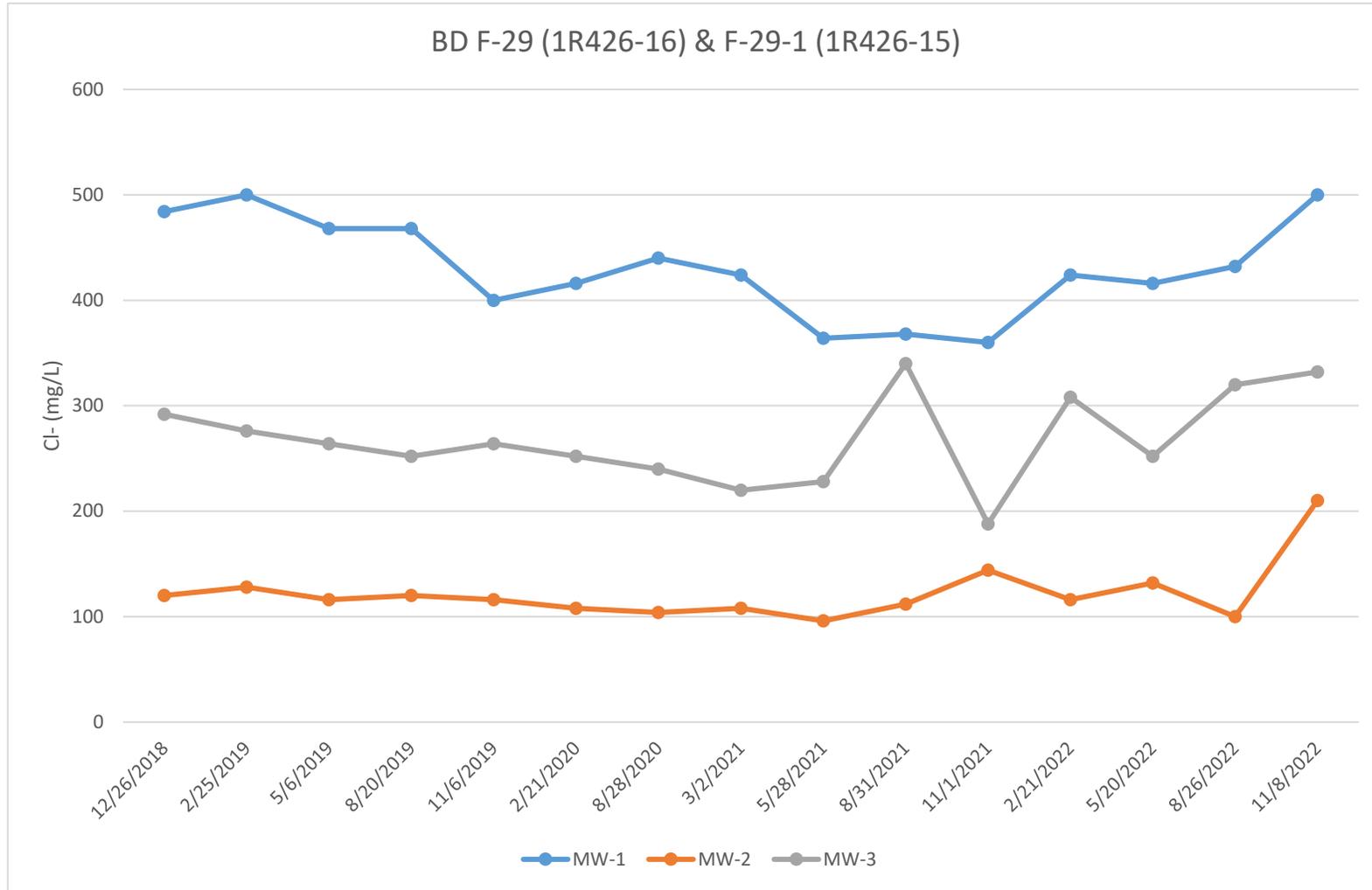
MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	98.22	102.98	0.7	3	12/26/2018	120	550	<0.001	<0.001	<0.001	<0.003	153	Clear No odor
2	98.2	102.98	0.7	3	2/25/2019	128	470	<0.001	<0.001	<0.001	<0.003	134	Clear No odor
2	98.18	102.98	0.7	3	5/6/2019	116	616	<0.001	<0.001	<0.001	<0.003	116	Clear No odor
2	98.13	102.98	0.7	3	8/20/2019	120	570	<0.001	<0.001	<0.001	<0.003	119	Clear No odor
2	98.19	102.98	0.7	3	11/6/2019	116	596	<0.001	<0.001	<0.001	<0.003	121	Clear No odor
2	98.16	102.48	0.7	3	2/21/2020	108	538	<0.0005	<0.0005	<0.0005	<0.002	146	Clear No odor
2	98.14	102.48	0.7	3	8/28/2020	104	617	XXX	XXX	XXX	XXX	109	Clear No odor
2	98.11	102.98	0.7	3	3/2/2021	108	598	XXX	XXX	XXX	XXX	109	Clear No odor
2	98.11	102.98	0.7	3	5/28/2021	96	607	XXX	XXX	XXX	XXX	120	Clear No odor

## ROC - BD F-29 (1R426-16) &amp; F-29-1 (1R426-15)

## Unit Letter F, Section 29, T21S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	98.1	102.98	0.7	3	8/31/2021	112	620	XXX	XXX	XXX	XXX	167	Clear No odor
2	98.11	102.98	0.7	3	11/1/2021	144	674	XXX	XXX	XXX	XXX	145	Clear No odor
2	98.15	102.98	0.7	3	2/21/2022	116	520	XXX	XXX	XXX	XXX	143	Clear No odor
2	98.08	102.98	0.7	3	5/20/2022	132	634	XXX	XXX	XXX	XXX	XXX	Clear No odor
2	98.1	102.98	0.7	3	8/26/2022	100	585	XXX	XXX	XXX	XXX	XXX	Clear No odor
2	98.12	102.98	0.7	3	11/8/2022	210	576	XXX	XXX	XXX	XXX	XXX	Clear No odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	99.88	108.83	1.4	5	12/26/2018	292	978	<0.001	<0.001	<0.001	<0.003	298	Clear No odor
3	99.87	108.83	1.4	5	2/25/2019	276	991	<0.001	<0.001	<0.001	<0.003	245	Clear No odor
3	99.88	108.83	1.4	5	5/6/2019	264	936	<0.001	<0.001	<0.001	<0.003	240	Clear No odor
3	99.9	108.83	1.4	5	8/20/2019	252	964	<0.001	<0.001	<0.001	<0.003	227	Clear No odor
3	100.03	108.83	1.4	3	11/6/2019	264	871	<0.001	<0.001	<0.001	<0.003	238	Clear No odor
3	99.99	108.83	1.4	3	2/21/2020	252	1,080	<0.0005	<0.0005	<0.0005	<0.002	242	Clear No odor
3	99.97	108.83	1.4	3	8/28/2020	240	1,080	XXX	XXX	XXX	XXX	219	Clear No odor
3	99.96	108.63	1.4	5	3/2/2021	220	994	XXX	XXX	XXX	XXX	316	Clear No odor
3	99.91	108.63	1.4	5	5/28/2021	228	1,070	XXX	XXX	XXX	XXX	292	Clear No odor
3	99.9	108.63	1.4	5	8/31/2021	340	1,130	XXX	XXX	XXX	XXX	301	Clear No odor
3	99.9	108.63	1.4	5	11/1/2021	188	726	XXX	XXX	XXX	XXX	153	Clear No odor
3	99.99	108.63	1.4	5	2/21/2022	308	803	XXX	XXX	XXX	XXX	250	Clear No odor
3	99.94	108.63	1.4	5	5/20/2022	252	868	XXX	XXX	XXX	XXX	XXX	Clear No odor
3	99.96	108.63	1.4	5	8/26/2022	320	983	XXX	XXX	XXX	XXX	XXX	Clear No odor
3	99.97	108.63	1.4	5	11/8/2022	332	1,000	XXX	XXX	XXX	XXX	XXX	Clear No odor





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

---

November 15, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 11/10/22 14:25.

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](http://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:	11/10/2022	Sampling Date:	11/08/2022
Reported:	11/15/2022	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1 (H225339-01)**

Chloride, SM4500CI-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>500</b>	4.00	11/11/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>1340</b>	5.00	11/15/2022	ND	530	106	500	0.890		

**Sample ID: MONITOR WELL #2 (H225339-02)**

Chloride, SM4500CI-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>210</b>	4.00	11/11/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>576</b>	5.00	11/14/2022	ND	530	106	500	0.890		

**Sample ID: MONITOR WELL #3 (H225339-03)**

Chloride, SM4500CI-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>332</b>	4.00	11/11/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>1000</b>	5.00	11/15/2022	ND	530	106	500	0.890		

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, Lab Director/Quality Manager





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

---

September 07, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 08/31/22 15:20.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	08/31/2022	Sampling Date:	08/26/2022
Reported:	09/07/2022	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1 (H224003-01)**

Chloride, SM4500CI-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>432</b>	4.00	09/01/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>1230</b>	5.00	09/07/2022	ND	529	106	500	4.14		

**Sample ID: MONITOR WELL #2 (H224003-02)**

Chloride, SM4500CI-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>100</b>	4.00	09/01/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>585</b>	5.00	09/06/2022	ND	529	106	500	4.14		

**Sample ID: MONITOR WELL #3 (H224003-03)**

Chloride, SM4500CI-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>320</b>	4.00	09/01/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>983</b>	5.00	09/06/2022	ND	529	106	500	4.14		

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, Lab Director/Quality Manager





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

---

May 27, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 05/25/22 12:10.

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](http://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:	05/25/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1 (H222226-01)**

Chloride, SM4500CI-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>416</b>	4.00	05/26/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>1230</b>	5.00	05/27/2022	ND	529	106	500	0.963		

**Sample ID: MONITOR WELL #2 (H222226-02)**

Chloride, SM4500CI-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>132</b>	4.00	05/26/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>634</b>	5.00	05/27/2022	ND	529	106	500	0.963		

**Sample ID: MONITOR WELL #3 (H222226-03)**

Chloride, SM4500CI-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>252</b>	4.00	05/26/2022	ND	104	104	100	0.00		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>868</b>	5.00	05/27/2022	ND	529	106	500	0.963		

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, Lab Director/Quality Manager





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

---

March 01, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 02/23/22 12:25.

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](http://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:	02/23/2022	Sampling Date:	02/21/2022
Reported:	03/01/2022	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1 (H220702-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>424</b>	4.00	02/24/2022	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Sulfate*</b>	<b>294</b>	50.0	02/28/2022	ND	18.6	92.8	20.0	2.66		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>918</b>	5.00	03/01/2022	ND	496	99.2	500	1.94		

**Sample ID: MONITOR WELL #2 (H220702-02)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>116</b>	4.00	02/24/2022	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Sulfate*</b>	<b>143</b>	25.0	02/28/2022	ND	18.6	92.8	20.0	2.66		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>520</b>	5.00	02/25/2022	ND	496	99.2	500	1.94		

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:	02/23/2022	Sampling Date:	02/21/2022
Reported:	03/01/2022	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

**Sample ID: MONITOR WELL #3 (H220702-03)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>308</b>	4.00	02/24/2022	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Sulfate*</b>	<b>250</b>	50.0	02/28/2022	ND	18.6	92.8	20.0	2.66		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>803</b>	5.00	03/01/2022	ND	496	99.2	500	1.94		

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.

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 202239

**CONDITIONS**

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 202239
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

**CONDITIONS**

Created By	Condition	Condition Date
michael.buchanan	Review of the 2022 Annual Groundwater Report for ROC BD F-29 and F-29-1: Content Satisfactory 1. Continue to groundwater sample quarterly. 2. Submit the 2023 Annual Groundwater Report by April 1, 2024.	7/7/2023