RICE Operating Company
112 West Taylor • Hobbs, New Mexico 88240
Phone: (575) 393-9174 • Fax: (575) 397-1471

April 12, 2022

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

RE: **Termination Request**
Rice Operating Company – Vacuum SWD System
Vacuum Jct. D-31 (1R425-81): UL/D, Sec. 31, T17S, R35E

Mr. Billings:

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.

Background and Previous Work
The site is located approximately 0.3 miles south of Buckeye, New Mexico at UL/D, Sec. 31, T17S, R35E as shown on the Geographic Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 124 feet below ground surface (bgs).

In 2009, ROC initiated work on the former Vacuum D-31 junction box as part of the system abandonment. The former junction box and surrounding soil was removed from an excavation of approximately dimensions 10x30x12-ft deep. Soils samples were field analyzed at regular intervals for chloride and hydrocarbon. Representative samples were sent to a commercial laboratory for analysis. The excavated soil was blended and returned to the excavation. A 1-ft thick compacted clay barrier was installed from 4 to 5 ft bgs. Clean, imported soil was installed above the clay barrier and the surface was returned to the natural contour and seeded. NMOCD was notified of potential groundwater impact on November 11th, 2009, and a Junction Box Disclosure Report was submitted with all the 2009 junction box closures and disclosures.

On February 8th, 2013, ROC submitted an Investigation and Characterization Plan (ICP) to NMOCD which was approved on March 4th, 2013. According to the ICP, field personnel were on site April 9th-11th, 2013, to conduct soil bore investigation. Six soil bores were drilled with soil samples being collected at regular intervals and field tested for chloride and organic vapors. Representative samples from each bore were sent to a commercial laboratory for analysis of chloride and hydrocarbon. SB-1 returned a laboratory chloride result of 3,200 mg/kg at 50 ft bgs and decreased to 1,020 mg/kg at 85 ft bgs. GRO was non-detect in both samples, and DRO was 17.5 mg/kg at 50 ft bgs and 14.9 mg/kg at 85 ft bgs. In SB-2, lab analysis returned results of

3,320 mg/kg at 20 ft bgs and decreased to 912 mg/kg at 85 ft bgs. GRO and DRO readings were non-detect in both samples. In SB-3, lab analysis returned results of 320 mg/kg at the surface, 624 mg/kg at 15 ft bgs, and 128 mg/kg at 20 ft bgs. GRO and DRO results were non-detect in each sample. Lab results from samples collected from SB-4, resulted in chloride concentrations of 3,760 mg/kg at 20 ft bgs and 1,310 mg/kg at 85 ft bgs. GRO and DRO results were non-detect except for the DRO reading at 20 ft bgs, which was 30.4 mg/kg. SB-5 returned laboratory chloride readings of 2,800 mg/kg at 20 ft bgs and 432 mg/kg at 85 ft bgs. GRO and DRO results were non-detect except for the DRO reading at 20 ft bgs, which was 10.8 mg/kg. SB-6 returned laboratory chloride readings of 3,360 mg/kg at 20 ft bgs and 1,280 mg/kg at 85 ft bgs. GRO and DRO results were non-detect in both samples. Each soil bore was plugged to ground surface with bentonite.

On May 31st, 2011, an Investigation and Characterization Plan (ICP) Report and Request for Further Investigation was submitted to NMOCD and approved on July 25th, 2013. The report requested NMOCD permission to continue to investigate the site to determine the lateral extent of the chloride impact. According to the NMOCD approved report, field personnel were on site December 13th-19th, 2013 to drill an additional four soil bores. As SB-7 through SB-10 were drilled, soil samples were collected at regular intervals and field tested for chloride and organic vapors. Representative samples were sent to a commercial laboratory for analysis. SB-7 returned a laboratory chloride result of 640 mg/kg at 60 ft bgs and 336 mg/kg at 80 ft bgs. SB-8 returned a laboratory chloride result of 5,440 mg/kg at 15 ft bgs and 2,600 mg/kg at 80 ft bgs. SB-9 returned a laboratory chloride result of 1,360 mg/kg at 40 ft bgs and 2,920 mg/kg at 80 ft bgs. SB-10 returned a laboratory chloride result of 176 mg/kg at 5 ft bgs and 128 mg/kg at 20 ft bgs. A 38 ft north surface sample was taken to a commercial laboratory and returned a chloride result of non-detect. GRO and DRO results at all depths in all bores were non-detect. Each soil bore was plugged to ground surface with bentonite. On February 10th, 2014, SB-11 was drilled at the site to determine depth to groundwater. Groundwater was determined to be located at a depth of 118 ft bgs. Each soil bore was plugged to ground surface with bentonite.

On March 24th, 2014, a Corrective Action Plan (CAP) was submitted to the NMOCD and subsequently approved on January 13th, 2015. The approved CAP proposed additional vertical delineation to depths greater than 85 ft bgs, based on a depth to groundwater of approximately 118 ft bgs. The additional delineation would be conducted to determine if the residual chloride concentrations in the vadose zone could potentially affect groundwater. In order to protect groundwater quality from potential chloride migration, the report also recommended the installation of a 20-mil, reinforced liner. The site would be excavated 50x90-ft to a depth of 3 ft bgs, due to the presence of hard rock in the area. The liner would cover the existing 10x30-ft clay liner previously installed at 5–4 ft bgs. The liners would provide a barrier that will inhibit the downward migration of chlorides to groundwater. Upon completion of backfilling, the site would be seeded with a native vegetative mix and soil amendments will be added as necessary.

On May 12th, 2014, SB-1 and SB-9 were extended and drilled to a depth of 115 ft bgs. SB-1 returned laboratory chloride readings of 2,480 mg/kg at 100 ft bgs and decreased to 1,630 mg/kg at 115 ft bgs. GRO and DRO results were non-detect in both the 100 ft and 115 ft samples. SB-9 returned laboratory chloride readings of 1,960 mg/kg at 95 ft bgs and decreased to 496 mg/kg at 115 ft bgs. GRO, DRO, and BTEX results were non-detect in both the 100 ft and 115 ft samples. Each soil bore was plugged in entirety with bentonite.

On March 4th, 2015, ROC began excavating the site to a depth of 3 ft bgs. The excavated soil was rock screened, and approximately 560 yds^3 excavated soil were exported to a NMOCD approved facility. Approximately 840 yds^3 of clean topsoil was imported to the site. A sample of the imported topsoil was analyzed by a commercial laboratory, resulting in a chloride concentration of non-detect. The sample was also field analyzed for hydrocarbon using a PID, resulting in a reading of 0.3 ppm. The bottom of the excavation was padded with approximately six inches of the imported soil, and a 50x90-ft, 20 mil reinforced poly liner was carefully installed and properly seated at the bottom of the excavation. Approximately six inches of clean imported soil was carefully padded overtop the liner. The screened rock was returned to the excavation and the imported topsoil was used to backfill the site to ground surface and to contour the site to the surrounding area. On April 7th, 2015, the backfilled site was seeded with approximately 18 pounds of Summer Wheat, 18 pounds Blue Gramma seed, and 34 bags of custom mix amendments. A CAP Report and Soil Closure Request summarizing the liner installation work was submitted to NMOCD on August 7th, 2015. NMOCD approved the report and granted 'Soil Closure' on August 14th, 2015.

Based on the soil bore data, monitoring wells were warranted at this site. On December 8th-9th, 2015, a near-source monitoring well (MW-1) and an up-gradient monitoring well (MW-2) were installed at the site. The monitoring wells were installed per EPA and NMOCD standards. The wells were developed and have been sampled regularly since installation. Chloride and TDS concentrations in MW-1 have decreased over time and have remained below WQCC standards for eight consecutive quarters. All other constituents in MW-1 and MW-2 have remained below WQCC standards since installation.

Recommendations

Based on the eight quarters of monitoring well data being below WQCC standards in both wells, the liner installation approved by NMOCD in the CAP, recovered vegetation, and 'Soil Closure' previously granted by NMOCD, ROC respectfully requests remediation termination or similar closure status for this site. Once NMOCD grants termination, both monitoring wells (MW-1 and MW-2) will be plugged and abandoned using Portland slurry and a three-foot cap of concrete at the surface. ROC acknowledges they have met the requirements of 19.15.29 NMAC and a final C-141 is attached.

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,

Katie Davis

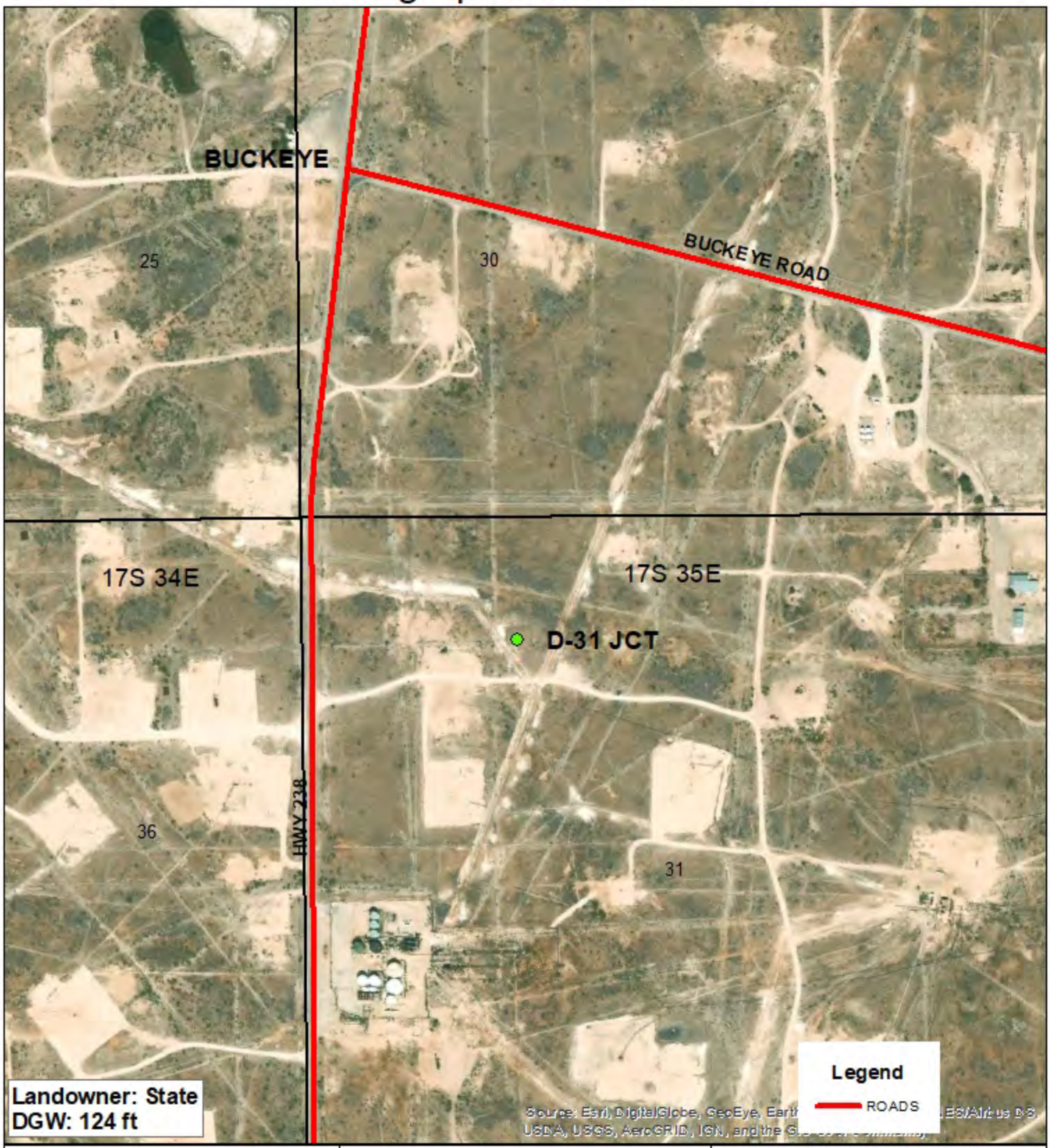
Katie Davis
Environmental Manager
RICE Operating Company

Appendix

Figures

RICE Operating Company
112 West Taylor, Hobbs, NM 88240
Phone 575.393.9174

Geographic Location



RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM
D-31 JCT

1R425-81

UL D SECTION 31
T-17-S R-35-E
LEA COUNTY, NM

GPS: 32.797535 -103.502785
NAD 83 STATE PLANE PROJECTION
NM EAST ZONE

N
W E
S

0 250 500
Feet

Drawing date:3/4/21
Drafted by: T. Grieco

Area Map

RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM
D-31 JCT

1R425-81

UL D SECTION 31
T-17-S R-35-E
LEA COUNTY, NM

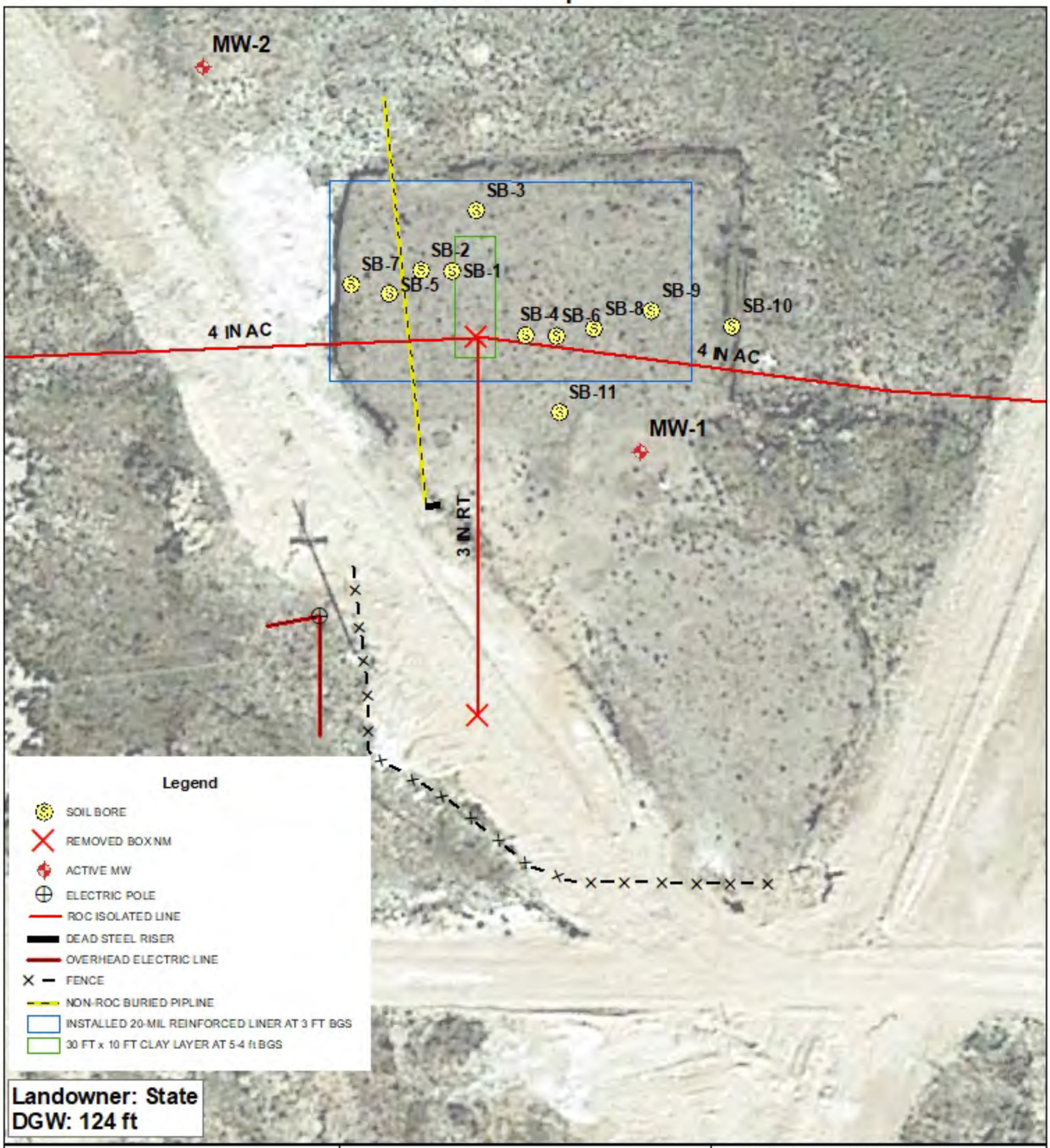
GPS: 32.797535 -103.502785
NAD 83 STATE PLANE PROJECTION
NM EAST ZONE

N
W E
S

0 250 500 Feet

Drawing date:3/28/22
Drafted by: T. Grieco

Site Map



RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM D-31 JCT

1R425-81

UL D SECTION 31
T-17-S R-35-E
LEA COUNTY, NM

GPS: 32.797535 -103.502785
NAD 83 STATE PLANE PROJECTION
NM EAST ZONE

N
W E
S

0 25 50 Feet

Drawing date:3/24/22
Drafted by: T. Grieco

Monitoring Well Sampling

RICE Operating Company
112 West Taylor, Hobbs, NM 88240
Phone 575.393.9174

ROC - Vacuum Jct. D-31 (1R425-81)
Unit Letter D, Section 31, T17S, R35E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	120.56	157.5	24	100	3/17/2016	450	1,040	<0.001	<0.001	<0.001	<0.003	50	Clear No odor
1	120.87	157.5	24	100	6/1/2016	600	1,310	<0.001	<0.001	<0.001	<0.003	71	Clear No odor
1	120.92	157.5	24	100	9/16/2016	460	1,100	<0.001	<0.001	<0.001	<0.003	33	Clear No odor
1	120.9	157.5	24	100	11/21/2016	490	1,150	<0.001	<0.001	<0.001	<0.003	76	Clear No odor
1	121.2	157.5	24	100	3/6/2017	540	1,260	<0.001	<0.001	<0.001	<0.003	59	Clear No odor
1	121.29	157.5	24	100	6/5/2017	680	1,530	<0.001	<0.001	<0.001	<0.003	77	Clear No odor
1	121.11	157.5	23	100	9/15/2017	650	1,720	<0.001	<0.001	<0.001	<0.003	71	Clear No odor
1	120.76	157.5	23	100	12/7/2017	284	770	<0.001	<0.001	<0.001	<0.003	45	Clear No odor
1	120.75	157.5	23	100	3/9/2018	256	658	<0.001	<0.001	<0.001	<0.003	20	Clear No odor
1	120.91	157.5	23	100	6/6/2018	312	872	<0.001	<0.001	<0.001	<0.003	61	Clear No odor
1	121.05	157.5	23	100	9/24/2018	128	398	<0.001	<0.001	<0.001	<0.003	27	Clear No odor
1	121.28	157.5	23	100	11/20/2018	268	706	<0.001	<0.001	<0.001	<0.003	31	Clear No odor
1	120.88	157.5	24	100	3/15/2019	144	481	<0.001	<0.001	<0.001	<0.003	30	Clear No odor
1	121.21	157.5	24	100	6/11/2019	68	522	<0.001	<0.001	<0.001	<0.003	190	Clear No odor
1	122.04	157.5	23	100	9/9/2019	436	1,190	<0.001	<0.001	<0.001	<0.003	43	Clear No odor
1	122.07	157.5	23	75	11/25/2019	532	1,140	<0.001	<0.001	<0.001	<0.003	41	Clear No odor
1	122.19	157.5	23	100	3/18/2020	44	345	<0.001	<0.001	<0.001	<0.003	72.3	Clear No odor
1	123.68	157.5	22	100	9/18/2020	40	355	XXX	XXX	XXX	XXX	47.7	Clear No odor
1	123.68	157.5	22	100	11/17/2020	60	414	XXX	XXX	XXX	XXX	58.4	Clear No odor
1	124.18	157.5	22	100	3/17/2021	56	384	XXX	XXX	XXX	XXX	40.7	Clear No odor
1	124.48	157.5	21	100	6/17/2021	68	360	XXX	XXX	XXX	XXX	63.3	Clear No odor
1	124.68	157.5	21	100	9/15/2021	68	368	XXX	XXX	XXX	XXX	39.8	Clear No odor
1	124.75	157.5	21	100	11/17/2021	112	441	XXX	XXX	XXX	XXX	37.4	Clear No odor
1					3/14/2022	92	457	XXX	XXX	XXX	XXX	51.8	

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	120.68	129.15	1.4	10	3/17/2016	68	414	<0.001	<0.001	<0.001	<0.003	48	Clear No odor

ROC - Vacuum Jct. D-31 (1R425-81)
Unit Letter D, Section 31, T17S, R35E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	121.12	129.15	1.4	10	6/1/2016	24	476	<0.001	<0.001	<0.001	<0.003	42	Clear No odor
2	121.13	129.15	1.4	10	9/16/2016	32	314	<0.001	<0.001	<0.001	<0.003	25	Clear No odor
2	121.11	129.15	1.4	10	11/21/2016	56	334	<0.001	<0.001	<0.001	<0.003	49	Clear No odor
2	121.44	129.15	1.2	10	3/6/2017	68	378	<0.001	<0.001	<0.001	<0.003	52	Clear No odor
2	121.54	129.15	1.2	10	6/5/2017	84	540	<0.001	<0.001	<0.001	<0.003	58	Clear No odor
2	121.37	129.15	1.2	10	9/15/2017	92	378	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
2	121.03	129.15	1.3	10	12/7/2017	32	366	<0.001	<0.001	<0.001	<0.003	63	Clear No odor
2	121.05	129.15	1.3	10	3/9/2018	60	374	<0.001	<0.001	<0.001	<0.003	65	Clear No odor
2	121.21	129.15	1.3	10	6/6/2018	64	437	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
2	121.75	129.15	1.2	8	9/24/2018	44	348	<0.001	<0.001	<0.001	<0.003	42	Clear No odor
2	122.01	129.15	1.1	8	11/20/2018	72	432	<0.001	<0.001	<0.001	<0.003	44	Clear No odor
2	121.19	129.15	1.3	8	3/15/2019	64	269	<0.001	<0.001	<0.001	<0.003	45	Clear No odor
2	121.51	129.15	1.2	8	6/11/2019	32	127	<0.001	<0.001	<0.001	<0.003	46	Clear No odor
2	122.36	129.15	1.1	8	9/9/2019	48	368	<0.001	<0.001	<0.001	<0.003	43	Clear No odor
2	122.35	129.15	1.1	8	11/25/2019	88	232	<0.001	<0.001	<0.001	<0.003	45	Clear No odor
2	122.5	129.15	1.1	8	3/18/2020	44	311	<0.001	<0.001	<0.001	<0.003	49.1	Clear No odor
2	124.04	129.15	0.8	8	9/18/2020	40	338	XXX	XXX	XXX	XXX	63.8	Clear No odor
2	124.04	129.15	0.8	8	11/17/2020	44	377	XXX	XXX	XXX	XXX	37.2	Clear No odor
2	124.63	129.15	0.7	8	3/17/2021	48	353	XXX	XXX	XXX	XXX	44.7	Clear No odor
2	124.91	129.15	0.7	8	6/17/2021	40	320	XXX	XXX	XXX	XXX	52.4	Clear No odor
2	125.09	129.15	0.7	8	9/15/2021	56	343	XXX	XXX	XXX	XXX	43.5	Clear No odor
2	125.15	129.15	0.6	8	11/17/2021	32	333	XXX	XXX	XXX	XXX	48.7	Clear No odor
2					3/14/2022	28	339	XXX	XXX	XXX	XXX	44.6	

CARDINAL Laboratories

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

March 21, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 03/16/22 14:10.

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.

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

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:	03/16/2022	Sampling Date:	03/14/2022
Reported:	03/21/2022	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H221051-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**92.0**	4.00	03/17/2022	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**51.8**	10.0	03/21/2022	ND	19.8	99.2	20.0	2.24	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**457**	5.00	03/18/2022	ND	527	105	500	0.0419	

Sample ID: MONITOR WELL #2 (H221051-02)

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	03/17/2022	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**44.6**	10.0	03/21/2022	ND	19.8	99.2	20.0	2.24	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**339**	5.00	03/18/2022	ND	527	105	500	0.0419	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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 Junction D-31	
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H221051

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 (2022)	TIME
1	Monitor Well #1	G	1	X								1		3/14	14:20
2	Monitor Well #2	G	1	X								1		3/14	10:30

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	

Relinquished by: Rozanne Johnson Date: 3/14/2022 Time: 14:10

Relinquished by: Date: Time:

Received by: Tamara Oldaker Date: 3-14-22 Time: 1410

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) TO

CARDINAL Laboratories

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

November 29, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 11/18/21 15:31.

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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:	11/18/2021	Sampling Date:	11/17/2021
Reported:	11/29/2021	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H213324-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**112**	4.00	11/19/2021	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**37.4**	10.0	11/22/2021	ND	24.0	120	20.0	0.418	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**441**	5.00	11/23/2021	ND	528	106	500	2.46	

Sample ID: MONITOR WELL #2 (H213324-02)

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	11/19/2021	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**48.7**	10.0	11/22/2021	ND	24.0	120	20.0	0.418	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**333**	5.00	11/23/2021	ND	528	106	500	2.46	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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 Junction D-31
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H213324

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 (2021)	TIME
01	Monitor Well #1	G	1	X								1		11/17	14:05
02	Monitor Well #2	G	1	X								1		11/17	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	

Relinquished by: Rozanne Johnson Date: 11/18/2021 Time: 15:30
Relinquished by: Date: Time:

Received by: Date: Time:
Received By: (Laboratory Staff) Jodi Henson 11/18/21 15:31

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

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

CHECKED BY: (Initials) JA

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

REMARKS:

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

CARDINAL Laboratories

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

September 24, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 09/20/21 15:41.

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 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:	09/20/2021	Sampling Date:	09/15/2021
Reported:	09/24/2021	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H212610-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**68.0**	4.00	09/21/2021	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
Sulfate*	**39.8**	10.0	09/24/2021	ND	20.0	100	20.0	1.10	

TDS 160.1 mg/L Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**368**	5.00	09/23/2021	ND	268	89.3	300	1.07	

Sample ID: MONITOR WELL #2 (H212610-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**56.0**	4.00	09/21/2021	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
Sulfate*	**43.5**	10.0	09/24/2021	ND	20.0	100	20.0	1.10	

TDS 160.1 mg/L Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**343**	5.00	09/23/2021	ND	268	89.3	300	1.07	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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 Junction D-31
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H2126010

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 (2021)	TIME
1	Monitor Well #1	G	1	X								1		9/15	12:45
2	Monitor Well #2	G	1	X								1		9/15	9:20

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	

Relinquished by: Rozanne Johnson	Date: 9/20/2021	Time: 15:40	Received by:	Date: Time:
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Jodi Henson	Date: 9/20/21 Time: 15:41

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

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

CHECKED BY: (Initials) JH

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

REMARKS:

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

#113

CARDINAL Laboratories

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

June 25, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 06/22/21 12:05.

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 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

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:	06/22/2021	Sampling Date:	06/17/2021
Reported:	06/25/2021	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H211610-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**68.0**	4.00	06/22/2021	ND	104	104	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**63.3**	10.0	06/22/2021	ND	23.5	117	20.0	9.79	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**360**	5.00	06/24/2021	ND	515	103	500	0.0280	

Sample ID: MONITOR WELL #2 (H211610-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**40.0**	4.00	06/22/2021	ND	104	104	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**52.4**	10.0	06/22/2021	ND	23.5	117	20.0	9.79	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**320**	5.00	06/24/2021	ND	515	103	500	0.0280	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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 Junction D-31
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H211610

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 (2021)	TIME
1	Monitor Well #1	G	1	X								1		6/17	12:10
2	Monitor Well #2	G	1	X								1		6/17	8:50

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	

Relinquished by: Rozanne Johnson	Date: 6/22/2021	Time: 12:05	Received by:	Date: 6/22/21 Time: 1205
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: Yes ✓ / No; Intact: Yes ✓ / No

CHECKED BY: (Initials) T.O.

REMARKS:

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

CARDINAL Laboratories

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

March 26, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 03/22/21 14:25.

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 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:	03/22/2021	Sampling Date:	03/17/2021
Reported:	03/26/2021	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H210717-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**56.0**	4.00	03/23/2021	ND	92.0	92.0	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*	**40.7**	10.0	03/24/2021	ND	21.0	105	20.0	2.65	

TDS 160.1 mg/L Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**384**	5.00	03/24/2021	ND	546	109	500	2.49	

Sample ID: MONITOR WELL #2 (H210717-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**48.0**	4.00	03/23/2021	ND	92.0	92.0	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*	**44.7**	10.0	03/24/2021	ND	21.0	105	20.0	2.65	

TDS 160.1 mg/L Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**353**	5.00	03/25/2021	ND	546	109	500	2.49	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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 Junction D-31
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H210717 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 (2021)	TIME
1	Monitor Well #1	G	1	X								1		3/17	13:50
2	Monitor Well #2	G	1	X								1		3/17	9:55

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	

Relinquished by: Rozanne Johnson	Date: 3/22/21	Time: 14:25	Received by:	Date: 3-22-21 Time: 1425
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date: Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition	Cool	Intact
Yes	✓	✓
No		

CHECKED BY: (Initials) JD

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

REMARKS:

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

CARDINAL Laboratories

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

December 01, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 11/20/20 16:05.

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 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:	11/20/2020	Sampling Date:	11/17/2020
Reported:	12/01/2020	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H003086-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**60.0**	4.00	11/23/2020	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**58.4**	10.0	11/23/2020	ND	23.4	117	20.0	2.07	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**414**	5.00	11/23/2020	ND	494	98.8	500	0.971	

Sample ID: MONITOR WELL #2 (H003086-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**44.0**	4.00	11/23/2020	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**37.2**	10.0	11/23/2020	ND	23.4	117	20.0	2.07	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**377**	5.00	11/24/2020	ND	494	98.8	500	0.971	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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 Junction D-31	
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # H003086 (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 (2020)	TIME
1	Monitor Well #1	G	1	X								1		11/17	13:00
2	Monitor Well #2	G	1	X								1		11/17	9:20

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	

Relinquished by: Rozanne Johnson	Date: 11/20/20	Time: 16:05	Received by: Tamara Oldaker	Date: 11-20-20	Time: 1605
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: Yes ✓ / No; Intact: Yes ✓ / No

CHECKED BY: (Initials) TO

REMARKS:

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

CARDINAL Laboratories

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

September 29, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 09/23/20 10:35.

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 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:	09/23/2020	Sampling Date:	09/18/2020
Reported:	09/29/2020	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H002522-01)

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	09/23/2020	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*	**47.7**	10.0	09/25/2020	ND	19.4	97.0	20.0	0.258	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**355**	5.00	09/25/2020	ND	827	82.7	1000	23.8	

Sample ID: MONITOR WELL #2 (H002522-02)

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	09/23/2020	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*	**63.8**	10.0	09/25/2020	ND	19.4	97.0	20.0	0.258	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**338**	5.00	09/25/2020	ND	827	82.7	1000	23.8	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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 Junction D-31

Project Location: T17S-R35E-Sec31 D ~ 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 (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2020)	TIME
H002526-1	Monitor Well #1	G	3	X				2				1		9/18	13:50
-2	Monitor Well #2	G	3	X				2				1		9/18	10:15

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	

Relinquished by: Rozanne Johnson Date: 9/22/2020 Time: 10:35

Relinquished by: Date: Time:

Received 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)

Phone Results: Yes / No

Fax Results: Yes / No Additional Fax Number:

REMARKS:

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

CARDINAL Laboratories

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

March 26, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION D-31

Enclosed are the results of analyses for samples received by the laboratory on 03/20/20 12:36.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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,

Mike Snyder For 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:	03/20/2020	Sampling Date:	03/18/2020
Reported:	03/26/2020	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H000866-01)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/25/2020	ND	0.021	106	0.0200	0.675	
Toluene*	<0.001	0.001	03/25/2020	ND	0.021	105	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	03/25/2020	ND	0.021	107	0.0200	1.78	
Total Xylenes*	<0.003	0.003	03/25/2020	ND	0.062	103	0.0600	1.69	
Total BTEX	<0.006	0.006	03/25/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *58.2-133*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**44.0**	4.00	03/23/2020	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*	**72.3**	10.0	03/23/2020	ND	21.5	108	20.0	0.980	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**345**	5.00	03/25/2020	ND	554	111	500	1.23	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For 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:	03/20/2020	Sampling Date:	03/18/2020
Reported:	03/26/2020	Sampling Type:	Water
Project Name:	VACUUM JUNCTION D-31	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC31 D-LEA CTY, NM		

Sample ID: MONITOR WELL #2 (H000866-02)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/25/2020	ND	0.021	106	0.0200	0.675	
Toluene*	<0.001	0.001	03/25/2020	ND	0.021	105	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	03/25/2020	ND	0.021	107	0.0200	1.78	
Total Xylenes*	<0.003	0.003	03/25/2020	ND	0.062	103	0.0600	1.69	
Total BTEX	<0.006	0.006	03/25/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *58.2-133*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**44.0**	4.00	03/23/2020	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*	**49.1**	10.0	03/23/2020	ND	21.5	108	20.0	0.980	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**311**	5.00	03/25/2020	ND	554	111	500	1.23	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

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

Mike Snyder For 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 Junction D-31
Project Location: T17S-R35E-Sec31 D ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY) H000816	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2020)	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
1	Monitor Well #1	G	3	X				2				1		3/18	13:50		X																X	X	X	
2	Monitor Well #2	G	3	X				2				1		3/18	10:15		X																X	X	X	

Relinquished by: Rozanne Johnson	Date: 3/20/2020	Time: 12:36	Received by:
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Jodi Henson 3/20/20 12:36

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

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

CHECKED BY: (Initials) JH

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

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

NMOCD Approval and Soil Closure Request

RICE Operating Company
112 West Taylor, Hobbs, NM 88240
Phone 575.393.9174

From: Oberding, Tomas, EMNRD
To: L Peter Galusky Jr
Cc: Katie Jones; Edward Hansen (ehansen@basinenv.com)
Subject: RE: Rice Operating Company - Vacuum Jct D-31 (1R425-81) - CAP Report and Soil Closure Request
Date: Friday, August 14, 2015 9:42:52 AM

Aloha all,
Based on the documentation provided and the meeting, the OCD approves the soil closure request for Vacuum Jct D-31 (1R425-81). In addition the OCD approves the CAP.
Please keep us informed.
Mahalo
-Doc

Tomáš 'Doc' Oberding PhD
Hydrologist, Adv-District 1
Oil Conservation Division, EMNRD
(505) 476-3403
E-Mail: tomas.oberding@state.nm.us
一期一会

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

Please note:
-The OCD is no longer granting "risk-based," or standard closure of events/RPs with remediation deferred to site abandonment/sale/closure. The RP will remain open until such time as historic contamination is addressed.
-Geotagged photographic documentation is stipulated for all events involving liquids.

If you have any questions or concerns, and for notification, please contact me.

From: L Peter Galusky Jr [mailto:lpgalusky@outlook.com]
Sent: Friday, August 07, 2015 3:53 PM
To: Oberding, Tomas, EMNRD
Cc: Katie Jones
Subject: Rice Operating Company - Vacuum Jct D-31 (1R425-81) - CAP Report and Soil Closure Request

Dr. Oberding,

Please find attached a Corrective Action Plan (CAP) Report and Soil Closure Request for Rice Operating Company's Vacuum Jct D-31 project in Lea County. Also attached is a project flow chart.

Please contact either myself or Katie Jones, with Rice, if you have any questions or need additional information.

Thank you.

Sincerely,

Pete G.

_____

L Peter Galusky, Jr PE
Texerra E-mail: lpg@texerra.com
Personal E-mail: lpgalusky@outlook.com
Cell: 719-339-6791
Web: texerra.com

L Peter Galusky, Jr PE
Texerra LLC

August 7th, 2015

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

Re: **Corrective Action Plan Report & Soil Closure Request**
Rice Operating Company – Vacuum SWD System
Vacuum Jct. D-31 (1R425-81): UL/D, Sec. 31, T17S, R35E

Sent via E-mail

Dr. Oberding:

Texerra LLC (Texerra) is submitting this Corrective Action Plan Report & Soil Closure Request on behalf of Rice Operating Company (ROC). This report documents remedial and corrective actions completed per the NMOCD approved Corrective Action Plan of March 24th, 2014 for this former junction box. This site is located approximately 0.3 miles south of Buckeye, New Mexico in UL/D, Sec. 31, T17S, R35E as shown in the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 118 +/- feet.

Background and Previous Work

In 2009, ROC initiated work on the former Vacuum D-31 junction as part of the system abandonment. The site was delineated using a backhoe to form an excavation with dimensions 10x30x12-ft deep and soil samples were screened at regular intervals for both hydrocarbons and chlorides. Representative composite samples were sent to a commercial laboratory for analysis of chloride and TPH. Laboratory analysis of the four-wall composite resulted in a chloride concentration of 3,320 mg/kg, a gasoline range organics (GRO) concentration below detectable limit and a diesel range organics (DRO) concentration of 966 mg/kg. Laboratory analysis of the bottom composite resulted in a chloride concentration of 2,840 mg/kg, a GRO concentration below detectable limit and a DRO concentration of 1,130 mg/kg. The excavated soil was blended on site and a sample of the blended soil returned a laboratory chloride concentration of 1,070 mg/kg, a GRO concentration below detectable limit and a DRO concentration of 1,180 mg/kg. The blended backfill was returned to the excavation up to 5 ft below ground surface (bgs). At 5-4 ft bgs, a 1-ft thick clay

20055 Laredo Ln **Monument, CO 80132**
Web: www.texerra.com **E-mail:** lpg@texerra.com
Tel: 719-339-6791

liner was installed and a clay compaction test performed on April 17th, 2009. Clean, imported soil was used to backfill the excavation to ground surface and to contour the site to the surrounding area. On June 8th, 2009, the site was seeded with a blend of native vegetation. NMOCD was notified of potential groundwater impact on November 11th, 2009, and a junction box disclosure report was submitted to NMOCD with all the 2009 junction box closures and disclosures.

ICP Results

On February 8th, 2013, ROC submitted an Investigation and Characterization Plan (ICP) to NMOCD which was approved on March 4th, 2013. As part of the ICP, RECS personnel were on site April 9th through 11th to conduct soil bore installations. Six soil bores were installed and as the bores were advanced, samples were field tested for chlorides and hydrocarbons. Representative samples from each bore were taken to a commercial laboratory for analysis of chlorides and hydrocarbons. SB-1 returned laboratory chloride readings of 3,200 mg/kg at 50 ft bgs and decreased to 1,020 mg/kg at 85 ft bgs. GRO in SB-1 was non-detect for both samples and DRO was 17.5 mg/kg at 50 ft bgs and 14.9 mg/kg at 85 ft bgs. In SB-2, chloride readings returned results of 3,320 mg/kg at 20 ft bgs and decreased to 912 mg/kg at 85 ft bgs. GRO and DRO readings were non-detect. In SB-3, the chloride readings returned results of 320 mg/kg at the surface, 624 mg/kg at 15 ft bgs and 128 mg/kg at 20 ft bgs. GRO and DRO reading were non-detect. In SB-4, chloride readings returned results of 3,760 mg/kg at 20 ft bgs and decreased to 1,310 mg/kg at 85 ft bgs. GRO and DRO results were non-detect except for the DRO reading at 20 ft bgs, which was 30.4 mg/kg. In SB-5, chloride readings returned results of 2,800 mg/kg at 20 ft bgs and decreased to 432 mg/kg at 85 ft bgs. GRO and DRO results were non-detect except for the DRO reading at 20 ft bgs, which was 10.8 mg/kg. In SB-6, chloride readings returned results of 3,360 mg/kg at 20 ft bgs and decreased to 1,280 mg/kg at 85 ft bgs. GRO and DRO results were non-detect throughout the bore. Each soil bore was plugged in entirety with bentonite.

On May 31st, 2011, an Investigation and Characterization Plan (ICP) Report and Request for Further Investigation was submitted to NMOCD and approved on July 25th, 2013. The ICP Report and Request for Further Investigation asked NMOCD permission to continue to investigate the site to determine the lateral extent of the chloride contamination. As part of this report, RECS personnel were on site December 13th and 19th to install an additional four soil bores. As SB 7-10 were installed, soil samples were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for confirmatory analysis. SB-7 returned a laboratory chloride result of 640 mg/kg at 60 ft bgs and 336 mg/kg at 80 ft bgs. SB-8 returned a laboratory chloride result of 5,440 mg/kg at 15 ft bgs and 2,600 mg/kg at 80 ft bgs. SB-9 returned a laboratory chloride result of 1,360 mg/kg at 40 ft bgs and 2,920 mg/kg at 80 ft bgs. SB-10 returned a laboratory chloride result of 176 mg/kg at 5 ft bgs and 128 mg/kg at 20 ft bgs. A 38 ft north surface sample was taken to a commercial laboratory and returned a chloride result of non-detect. GRO and DRO results at all depths in all bores were non-detect. Each soil bore was plugged in entirety with bentonite.

On February 10th, 2014, SB-11 was installed at the site to determine depth to groundwater at the site. Groundwater was determined to be located at a depth of 118 ft bgs. The soil bore was plugged in entirety with bentonite.

Corrective Action Plan (CAP)

On March 24th, 2014, a Corrective Action Plan (CAP) was submitted to the NMOCD and subsequently approved on January 13th, 2015. The approved CAP proposed additional vertical delineation to depths greater than 85 ft bgs, based on a depth to groundwater of 118 ft bgs. The additional delineation would be conducted to determine if the residual chloride concentrations in the vadose zone could potentially affect groundwater.

In order to protect groundwater quality from potential chloride migration, the report also recommended the installation of a 20-mil, reinforced liner. The site would be excavated 50 ft x 90 ft to a depth of 3 ft bgs, due to the presence of hard rock in the area (Figure 2). The excavation would cover the 38 ft North Surface Sample and would extend 5 ft beyond the 5 ft south vertical taken during the junction box delineation phase. Chloride concentrations in the south vertical remained low with a concentration of 165 mg/kg at 12 ft bgs. To the west, the edge of the excavation is located 5 ft beyond SB-7. To the east, the edge of the excavation is located half way between SB-9 and SB-10. The soils placed above the liner would have a laboratory chloride reading no greater than 500 mg/kg and a field PID reading below 100 ppm. Excavated soil would be evaluated for use as backfill and any soils requiring disposal would be properly disposed of at a NMOCD approved facility. At the base of the excavation, a 20-mil reinforced poly liner would be installed and properly seated. The liner would overlay the previously installed 30 ft x 10 ft clay liner at 5 – 4 ft bgs. The poly liner would provide a barrier that will inhibit the downward migration of chlorides to groundwater. Upon completion of backfilling, the site would be seeded with a native vegetative mix and soil amendments will be added as necessary.

Corrective Actions Completed

On May 12th, 2014, SB-1 and the bore with the highest chloride concentration at depth, SB-9, were extended and drilled to a depth of 115 ft bgs. SB-1 returned laboratory chloride readings of 2,480 mg/kg at 100 ft bgs and decreased to 1,630 mg/kg at 115 ft bgs. GRO and DRO results were non-detect in both the 100 ft and 115 ft samples. SB-9 returned laboratory chloride readings of 1,960 mg/kg at 95 ft bgs and decreased to 496 mg/kg at 115 ft bgs. GRO, DRO, and BTEX results were non-detect in both the 100 ft and 115 ft samples. Each soil bore was plugged in entirety with bentonite. This additional investigation is included in Appendix A.

Based on the extended soil bore data, monitoring wells are warranted for this site. A near-source and up-gradient monitoring well will be installed as shown on the attached plat (Figure 2). The monitoring wells will be installed per EPA and NMOCD standards. The monitor wells will be sampled quarterly and once appropriate groundwater analysis data has been obtained, a remedy for groundwater will be proposed to NMOCD. Additional monitoring wells may be required to fully delineate groundwater quality.

ROC began excavation for the installation of the subsurface liner on March 4th, 2015. The depth of excavation was 3 ft bgs and the areal dimensions were 50 by 90 ft per the specifications in the CAP. The excavated soil was rock screen, and approximately 560 yds^3 of excavated soil were exported to a NMOCD facility. Approximately 840 yds^3 of clean top soil was imported to the site. A sample of the imported top soil was analyzed by a commercial laboratory, resulting in a chloride concentration

of non-detect. The sample was also field analyzed for hydrocarbon using a PID, resulting in a reading of 0.3 ppm. The bottom of the excavation was padded with approximately six inches of the imported soil material and a 20 mil reinforced poly liner was carefully installed and properly seated over this. Approximately six inches of clean imported soil material was carefully padded overtop of the liner. The screened rock was returned to the excavation and the imported top soil was carefully added to bring the excavation to natural, surrounding elevation. The seedbed was prepared and approximately 18 pounds of Summer Wheat, 18 pounds Blue Gramma seed, and 34 bags of custom mix amendments were disked in to the top soil layer on April 7th, 2015. Photo documentation, laboratory analysis results, PID sheet, and a revegetation form are included in Appendix B.

Given that ROC has completed remedial work to protect groundwater from the potential leaching of residual soil contaminants and that the protection of groundwater quality is thus ensured, we respectfully request 'soil closure' or similar regulatory closure status of this project for the vadose zone. We plan to install monitoring wells and conduct groundwater sampling in the foreseeable future and we will correspond with NMOCD as to the outcome and in the planning of any subsequent actions.

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. We thus submit this CAP Report and Soil Closure Request for your review and consideration.

Please call Rice Operating Company or me if you have any questions or need additional information.

Thank you.

Sincerely,

L. Peter (Pete) Galusky, Jr PE

NM Prof. Engineer No. 22561

Copy: Rice Operating Company

Attachment List

Figures

Figure 1 - Site Location Map

Figure 2 - Plan View of Installed Liner

Appendix A

SB Log

Lab Analysis

Field PID Analysis

Appendix B

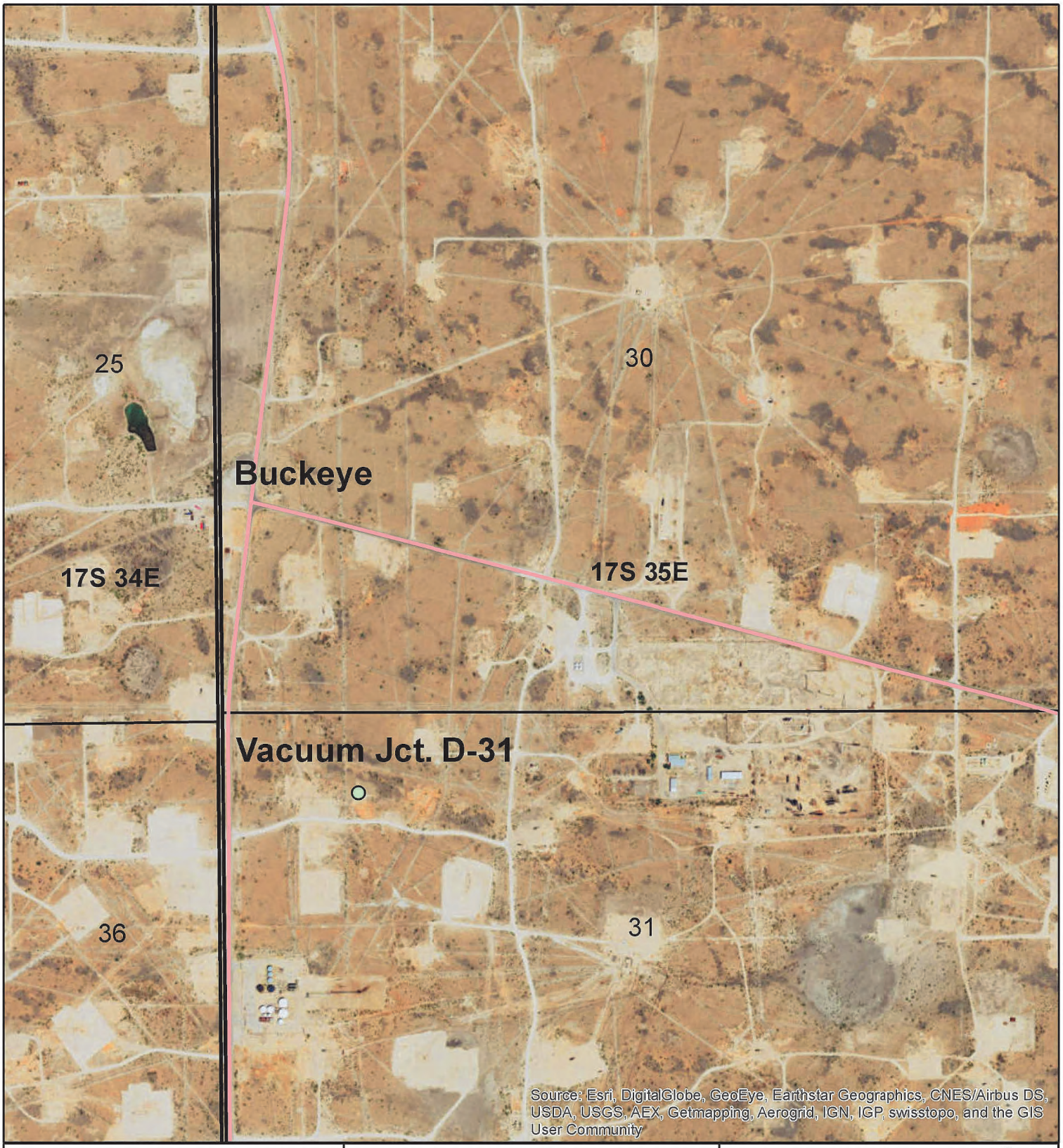
Lab Analysis of Fill Material Chloride Concentration

Field PID Analysis of Fill Material Petroleum Hydrocarbon Concentration

Photographs of Liner Installation,

Revegetation Form

Site Location Map



Basin Environmental Service Technologies
Effective Solutions

Vacuum Jct. D-31

NMOCD Case #: 1R425-81

Legals: UL/D, Section 31
T17S, R35E
Lea County, NM

Figure 1

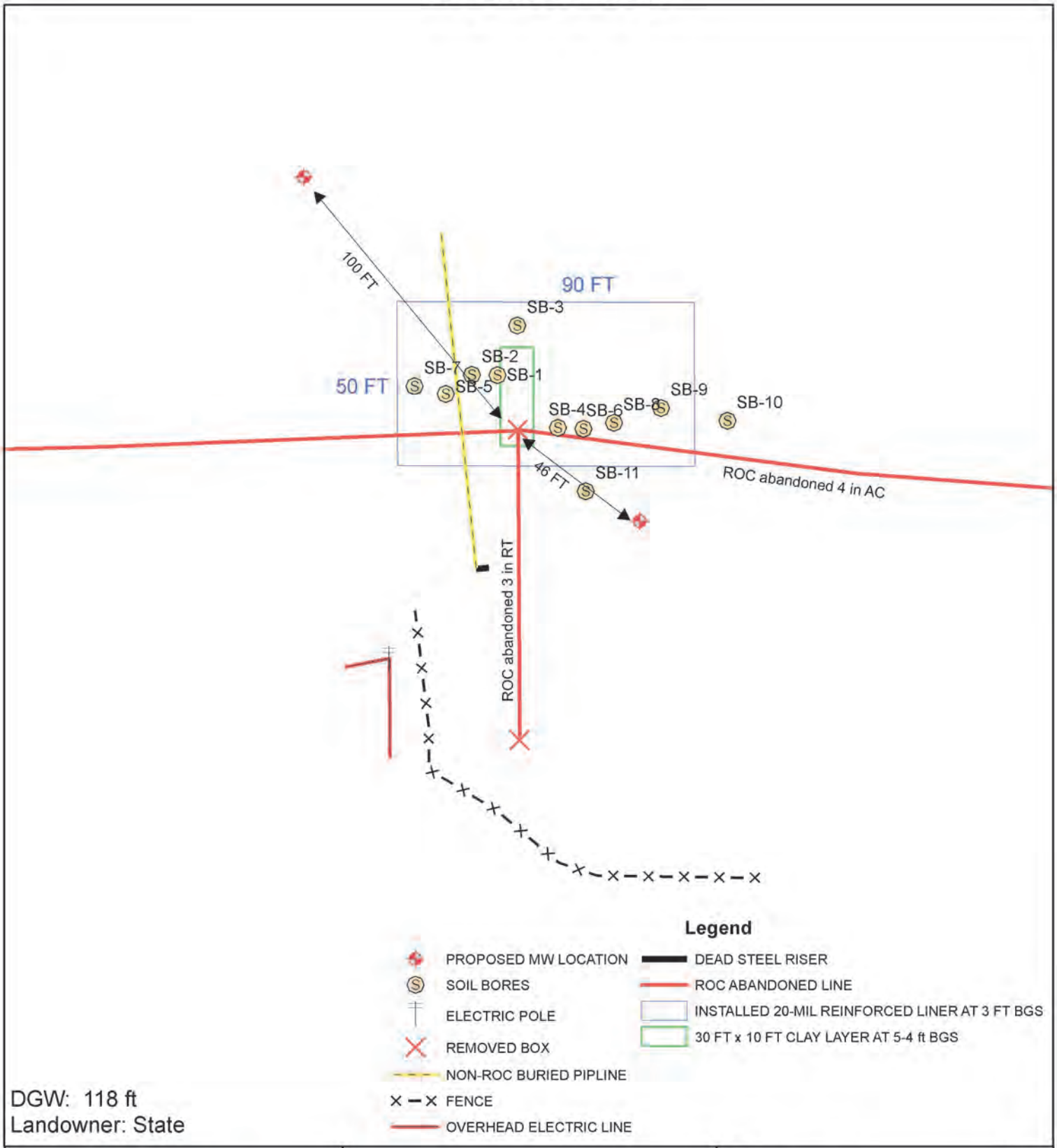
N
W E
S

GPS: 32.797607, -103.502839

0 500 1,000
Feet

Drawing date: 7/27/15
Drawn by: L. Weinheimer

Installed Liner



DGW: 118 ft
Landowner: State

Basin Environmental Service Technologies
Effective Solutions

Vacuum Jct. D-31

NMOCD Case #: 1R425-81

Legals: UL/D, Section 31
T17S, R35E
Lea County, NM

Figure 2

N W E S

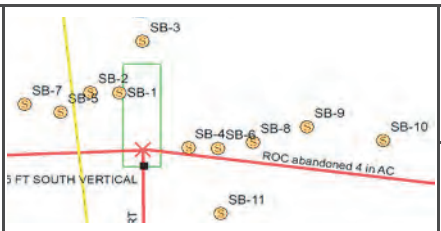
GPS: 32.797607, -103.502839

0 25 50
Feet

Drawing date: 7/27/15
Drafted by: L. Weinheimer

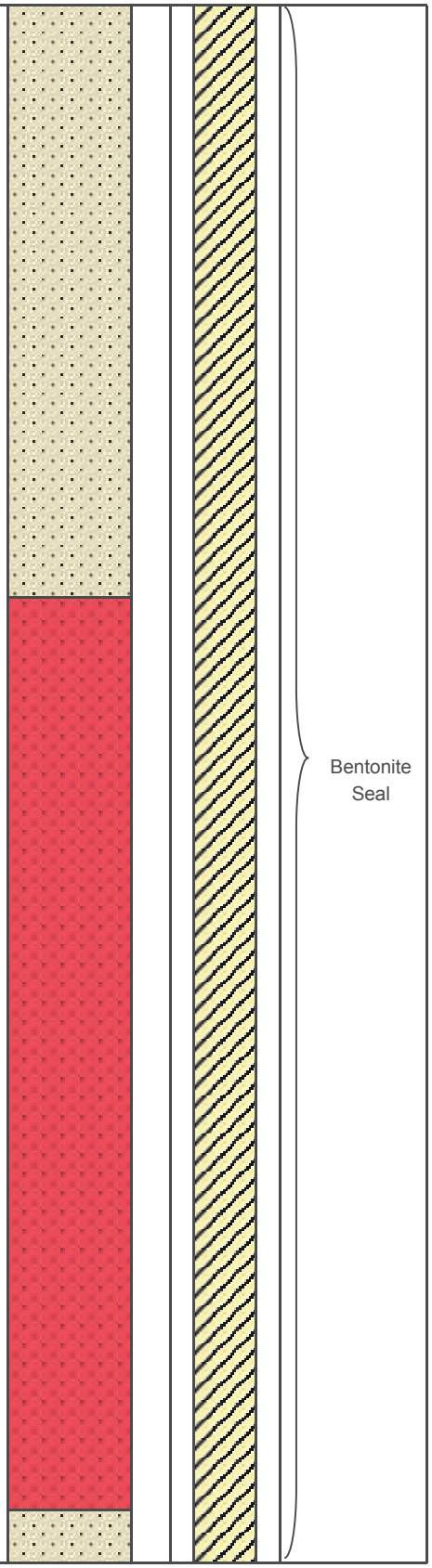
APPENDIX A

Additional Soil Investigation

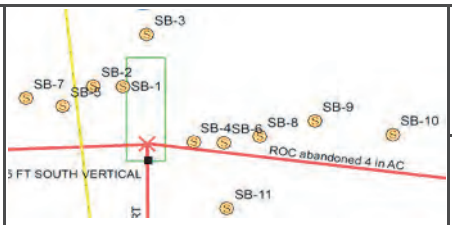
Logger:	Edward Cesareo		RECS RICE ENVIRONMENTAL CONSULTING & SERVICES
Driller:	Harrinson&Cooper		**Project Name:** Vacuum Jct. D-31 **Well ID:** SB-1
Drilling Method:	Air Rotary		**Project Consultant:** RECS
Start Date:	5/12/2014		
End Date:	5/12/2014		
Comments: All samples were taken from cuttings. SB-1 was installed 15' north of the former junction. SB-1 drilled to 85' 4/9/2013 and extended to 115' 5/12/2014 **DRAFTED BY:** Catherine Uršanić TD = 115' GW = 118'			**Location:** U/L D, Sec. 31, T17S, R35E **Lat:** 32°47'51.253"N **Long:**103°30'10.392"W **County**:Lea **State**:NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				REGOLITH BROWN SAND		Bentonite Seal
SS						
5 ft						
10 ft						
15 ft	954		2.1	CALICHE/SANDSTONE		
20 ft	1936		0.6	TAN SAND		
25 ft	2517		2.1			
30 ft	2398		1.7			
35 ft	2478		1.3			

				TAN SAND	
40 ft	2302		1.4		
45 ft	1986		0.8		
50 ft	2699	CI-3200	0.1		
		GRO <10			
		DRO <17.5			
55 ft	1865		0.2	MOIST RED SAND	
60 ft	2392		0.4		
65 ft	1628		0.4		
70 ft	970		0.3		
75 ft	1046		0.2		
80 ft	1271		0.2		
85 ft	961	CI-1020	0.8		
		GRO <10	DRO 14.9		



				TAN SAND/NO ODOR				Bentonite Seal
90 ft	1890		9.8					
				TAN SAND/NO ODOR				
95 ft	1947		97.5					
100 ft	2475	CI-2480	18.4					
		GRO <10						
		DRO <10						
105 ft	1945		16					
110 ft	1788		12.3					
115 ft	1611	CI-1630	8.5					
		GRO <10						
		DRO <10						

Logger:	Edward Cesareo		RECS RICE ENVIRONMENTAL
Driller:	Harrison&Cooper		**Project Name:** Vacuum Jct. D-31 **Well ID:** SB-9
Drilling Method:	Air Rotary		**Project Consultant:** RECS
Start Date:	5/12/2014		**Location:** U/L D, Sec. 31, T17S, R35E
End Date:	5/12/2014		**Lat:** 32°47'51.179"N **County**:Lea
Comments: All samples were taken from cuttings. SB-9 was installed 44' east of the former junction box. SB-9 drilled to 80' 12/13/2013 and extended to 115' on 5/12/2014. **DRAFTED BY:** Catherine Uršanić			**Long:**103°30'9.523"W **State**:NM
TD = 115'	GW = 118'		

Depth (feet)	Chloride field tests	LAB	PID	Description
				DARK BROWN SAND
SS	187		1.7	
				TAN SAND/ROCK
5 ft	293		2.4	
				TAN SILTY SAND
10 ft	1,064		2.6	
15 ft	2,173		7.0	
				TAN SAND/GRAVEL
20 ft	586		2.9	
				TAN SAND
25 ft	1,054		3.2	
30 ft	959		3.7	
35 ft	1,250		3.0	

Lithology

Well Construction: Bentonite Seal

40 ft	3,580	Cl-1360	3.5					
		GRO <10						
		DRO <10						
45 ft	2,128		2.8					
50 ft	2,399		2.0					
55 ft	2,497		4.7					
60 ft	2,503		1.6					
				TAN SAND				Bentonite Seal
65 ft	2,399		1.4					
70 ft	2,617		3.4					
75 ft	2,960		2.1					
80 ft	3,003	Cl-2920	3.7					
		GRO <10						
		DRO <10						

85 ft	634		19.6	TAN SAND/NO ODOR				Bentonite Seal
90 ft	1,883		380.0					
95 ft	1,957		CI-1960	384.0				
	B <0.05	T <0.05	GRO <10					
	E <0.05	X <0.15	DRO <10					
100 ft	888			372.0				
105 ft	1,370			392.0				
110 ft	1,087			130.0				
115 ft	512		CI-496	63.9				
	B <0.05	T <0.05	GRO <10					
	E <0.05	X <0.15	DRO <10					

CARDINAL Laboratories

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

May 19, 2014

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT. D-31 17S-35E

Enclosed are the results of analyses for samples received by the laboratory on 05/12/14 16:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	05/12/2014	Sampling Date:	05/12/2014
Reported:	05/19/2014	Sampling Type:	Soil
Project Name:	VACUUM JCT. D-31 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #1 100' (H401441-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2480**	16.0	05/14/2014	ND	400	100	400	14.8	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/16/2014	ND	203	101	200	4.36	
DRO >C10-C28	<10.0	10.0	05/16/2014	ND	230	115	200	6.27	

Surrogate: 1-Chlorooctane	*101 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*100 %*	*63.6-154*

Sample ID: SB #1 115' (H401441-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1630**	16.0	05/14/2014	ND	400	100	400	14.8	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/16/2014	ND	203	101	200	4.36	
DRO >C10-C28	<10.0	10.0	05/16/2014	ND	230	115	200	6.27	

Surrogate: 1-Chlorooctane	*106 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*104 %*	*63.6-154*

Cardinal Laboratories *=Accredited Analyte

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
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	05/12/2014	Sampling Date:	05/12/2014
Reported:	05/19/2014	Sampling Type:	Soil
Project Name:	VACUUM JCT. D-31 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #9 95' (H401441-03)

BTEX 8260B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2014	ND	2.28	114	2.00	0.684	
Toluene*	<0.050	0.050	05/16/2014	ND	2.23	112	2.00	3.55	
Ethylbenzene*	<0.050	0.050	05/16/2014	ND	2.07	104	2.00	3.35	
Total Xylenes*	<0.150	0.150	05/16/2014	ND	6.30	105	6.00	2.33	
Total BTEX	<0.300	0.300	05/16/2014	ND					

Surrogate: Dibromofluoromethane	*96.4 %*	*61.3-142*
Surrogate: Toluene-d8	*103 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*103 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1960**	16.0	05/14/2014	ND	400	100	400	14.8	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/16/2014	ND	203	101	200	4.36	
DRO >C10-C28	<10.0	10.0	05/16/2014	ND	230	115	200	6.27	

Surrogate: 1-Chlorooctane	*111 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*111 %*	*63.6-154*

Cardinal Laboratories *=Accredited Analyte

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
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	05/12/2014	Sampling Date:	05/12/2014
Reported:	05/19/2014	Sampling Type:	Soil
Project Name:	VACUUM JCT. D-31 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #9 115' (H401441-04)

BTEX 8260B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2014	ND	2.28	114	2.00	0.684	
Toluene*	<0.050	0.050	05/16/2014	ND	2.23	112	2.00	3.55	
Ethylbenzene*	<0.050	0.050	05/16/2014	ND	2.07	104	2.00	3.35	
Total Xylenes*	<0.150	0.150	05/16/2014	ND	6.30	105	6.00	2.33	
Total BTEX	<0.300	0.300	05/16/2014	ND					

Surrogate: Dibromofluoromethane	*93.1 %*	*61.3-142*
Surrogate: Toluene-d8	*101 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*98.5 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**496**	16.0	05/14/2014	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/16/2014	ND	203	101	200	4.36	
DRO >C10-C28	<10.0	10.0	05/16/2014	ND	230	115	200	6.27	

Surrogate: 1-Chlorooctane	*109 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*108 %*	*63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: RICE Operating	BILL TO
Project Manager: Katie Jones	P.O. #:
Address: 112 W. Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: VACUUM JCT. D-31 17-S/35-E	Phone #:
Sampler Name: Edward Cesareo	Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS
H401441																				
1	SBH1 100'	G	1			X					X		5-12-14	11:00	X	X				
2	SBH1 115'	G	1			X					X			11:05						
3	SBH9 95'	G	1			X					X			9:40	X	X	X			
4	SBH9 115'	G	1			X					X			9:45						

Relinquished By: Edward Cesareo	Date: 5-12-14 Time: 4:35	Received By: Jodi Henson	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result: ☐ Yes ☑ No Add'l Phone #:
Fax Result: ☐ Yes ☑ No Add'l Fax #:
REMARKS:

email results
hconder@rice-ecs.com; Lweinheimer@rice-ecs.com;
kjones@riceswd.com; Lpena@riceswd.com;
Kwatson@rice-ecs.com; ecesareo@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#54

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

CK. MODEL NO.	X	MODEL: PGM 7300 **X**	SERIAL NO: 590-000183
		MODEL: PGM 7300	SERIAL NO: 590-000504
		MODEL: PGM 7320	SERIAL NO: 592-903318
		MODEL: PGM 7300	SERIAL NO: 590-902553

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: HAL-248-100-1	7/1/2015
METER READING ACCURACY: 100PPM	

ACCURACY : +/- 2%

COMPANY
ROC

SITE	UNIT	SECTION	TOWN SHIP	RANGE
VACUUM JCT. D-31	D	31	T17S	R35E

SAMPLE ID	PID	SAMPLE ID	PID
SB# 9 85'	19.6	SB# 1 90'	9.8
SB# 9 90'	380	SB# 1 95'	97.5
SB# 9 95'	384	SB# 1 100'	18.4
SB# 9 100'	372	SB# 1 105'	16
SB# 9 105'	392	SB# 1 110'	12.3
SB# 9 110'	130	SB# 1 115'	8.5
SB# 9 115'	63.9		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: Edward Cesareo *(signature not available)* DATE: 5/12/2014

APPENDIX B

Excavation and Liner Installation

CARDINAL Laboratories

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

March 20, 2015

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JCT. D-31 17S-35E

Enclosed are the results of analyses for samples received by the laboratory on 03/13/15 16:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	03/13/2015	Sampling Date:	03/13/2015
Reported:	03/20/2015	Sampling Type:	Soil
Project Name:	VACUUM JCT. D-31 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: IMPORTED TOPSOIL (H500710-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/18/2015	ND	416	104	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: RICE Operating		BILL TO	
Project Manager: Katie Jones		P.O. #:	
Address: 112 W. Taylor		Company:	
City: Hobbs	State: NM Zip: 88240	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location: Vacuum jct. D-31 (17S 35E)		Phone #:	
Sampler Name: Karanja Lewis		Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS					
H500710																									
1	Imported Top Soil	G	1			✓							3-13-15	2:32	✓										

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Karanja Lewis	Date: 3-13-15 Time: 4:00	Received By: Jodi Henson	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	5.2°c	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) JH

Phone Result: ☐ Yes ☑ No Add'l Phone #:
Fax Result: ☐ Yes ☑ No Add'l Fax #:
REMARKS:

email: hconder@riceswd.com; kjones@riceswd.com; lflores@rice-ecs.com; lweinheimer@rice-ecs.com; knorman@rice-ecs.com; jkamplain@rice-ecs.com; sedwards@rice-ecs.com; cursanic@rice-ecs.com
Environmental Tech: Klewis @rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

CK.		MODEL: PGM 7300	SERIAL NO: 590-000508
MODEL		MODEL: PGM 7300	SERIAL NO: 590-000504
NO.		MODEL: PGM 7320	SERIAL NO: 592-903318
	X	MODEL: PGM 7300	SERIAL NO: 590-001413

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : HAL-248-100-1	EXPIRATION DATE: 07/01/2015
METER READING ACCURACY: 100.0 ppm	

ACCURACY : +/- 2%

COMPANY
RICE Operating Company (ROC)

SITE	UNIT	SECTION	TOWN SHIP	RANGE
Vacuum Jct. D-31	D	31	17S	35E

SAMPLE ID	PID	SAMPLE ID	PID
Imported topsoil	0.3		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE: K. Lewis DATE: 3/13/2015

Vacuum Jct. D-31 (1R425-81)
Unit Letter D, Section 31, T17S, R35E

Site prior to excavation,
facing south 3/2/2015

Digging excavation,
facing west 3/9/2015

Exporting spoiled material,
facing northwest 3/11/2015

Importing topsoil,
facing west 3/13/2015

6” padding of topsoil,
facing southwest 3/26/2015

20-mil poly liner installed at 2.5 ft bgs,
facing west 3/26/2015

Backfilling above the liner,
facing southwest 3/27/2015

Backfilling the site with caliche rock,
facing southeast 3/27/2015

Contouring the site,
Facing west 3/20/2015

Spreading amendments,
facing northwest 4/7/2015

Seeding and disking the site,
facing northeast 4/7/2015

Site complete,
facing southeast 4/7/2015

PO Box 2498
Hobbs, NM 88241
Phone: (575) 393-2967
Fax: (575) 393-0293

VEGETATION FORM

1. General Information

Site name: Vacuum Jct. D-31						
U/L	Section	Township	Range	County	Latitude	Longitude
D	31	17S	35E	Lea	N 32.797643	-103.502777
Contact Name: Hack Conder						
Email:	hconder@rice-ecs.com					
Site size:			square feet:	17,183 square feet		

2. Soils **Do not rip caliche subsoils; caliche rocks brought to the surface by ripping shall be removed.*

Salvaged from site		Bioremediated	X	Imported		Blended		Depth (in)			
Texture:	Moist sand			Describe soil & subsoil:		Top soil above caliche					
Soil prep methods:	Rip		Depth (in)		Disc	X	Depth (in)	6	Rollerpack		
Date completed:	4/7/2015										

3. Bioremediation

Fertilizer		Hay		Other	X
Type:				Describe: 3 Bags Manure and 34 bags of custom bioremediation.	
Lbs/acre:					

4. Seeding **Attach seed bag tags to this form. Seed bag tags shall contain the site name and S-T-R.*

Custom Seed Mix	X	Prescribed Mix		Seed Mix Name:	18 lbs. Summer Wheat, 18 lbs. Blue Grama		Date:	4/7/2015	
Broadcast	Push Broadcasting Seeder and Tractor				Method:	With Broadcast Seeder			
Soil conditions during seed:	Dry	X	Damp		Wet				
Observations:	The seed was disced into the site.								

5. Certification I hereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief.

Name: Jose Flores	Title:	Environmental Technician	Date:	4/7/2015
Signature:	Jose Flores			

Final C-141

RICE Operating Company
112 West Taylor, Hobbs, NM 88240
Phone 575.393.9174

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2110349043
District RP	1R425-81
Facility ID	
Application ID	pEJH1015949962

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Katie Davis Title: Environmental Manager

Signature: Katie Davis Date: 4/12/2022

email: kjones@riceswd.com Telephone: 575-393-9174

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Jennifer Nobui Date: 05/03/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

Vacuum Jct. D-31 (1R425-81)
Unit D, Section 31, T17S, R35E

Facing South 11/3/2021

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 97797

CONDITIONS

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 97797
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Termination Request Approved.	5/3/2022