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

**April 1, 2020** 

### **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: 2019 Annual Groundwater Report Rice Operating Company – Vacuum SWD System Vacuum Jct. A-36 (1R425-83): UL/A, Sec. 36, T17S, R34E

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 ¼ mile SSE of Buckeye, New Mexico at UL/A, Sec. 36, T17S, R34E as shown on the Geographical Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 130 feet below ground surface (bgs).

In 2009, ROC initiated work on the former Vacuum A-36 junction box as part of the system abandonment. The former junction box and surrounding soil was removed from an excavation of approximately dimensions 10x10x12-ft deep. Soils samples were field analyzed at regular intervals for chloride and hydrocarbon. Representative samples were sent to a commercial laboratory for analysis, resulting in elevated chloride concentrations and hydrocarbon concentrations below detectable limits. 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 March  $12^{th}$ , 2010 and a Junction Box Disclosure Report was submitted with all the 2009 junction box closures and disclosures.

ROC initiated soil sampling and analysis as indicated in our Investigation and Characterization Plan (ICP) of February 15<sup>th</sup>, 2013. As part of the ICP, personnel were on site to conduct soil bore installations. Three soils bore were installed at the site with soil samples collected at regular intervals. Each bore was plugged with bentonite to ground surface. Three verticals were excavated on March 24<sup>th</sup>, 2014, and representative samples were sent to a commercial laboratory for analysis.

A Corrective Action Plan (CAP) summarizing the soil sampling was submitted to NMOCD and approved on May 15<sup>th</sup>, 2015. The CAP proposed installing a modified 70x42-ft, 20-mil reinforced liner at a depth of 3.5 ft bgs due to the presence of hard rock in the area. In June 2015, the area was excavated, and a 20-mil reinforced liner was installed and properly seat at a depth of 3.5 ft bgs. The excavation was backfilled to ground surface and the site was contoured to the surrounding area. The disturbed area was then seeded with a blend of native vegetation.

On December 9<sup>th</sup> and 10<sup>th</sup>, 2015, a near-source monitoring well (MW-1) and an up-gradient monitoring well (MW-2) were installed at the site. The wells were developed and have been sampled quarterly since installation. Chloride concentrations in MW-1 and MW-2 have generally remained low with the last four quarters in each well below 76 mg/L. BTEX concentrations have remained below detectable limits since the wells were installed.

Given that BTEX concentrations have been below detectable limits since installation, ROC requests to suspend BTEX sampling in both wells (MW-1 and MW-2). Further, due to the current climate, and in the interest of safety, ROC proposes to reduce groundwater monitoring from quarterly to semi-annually beginning this year. This request is only temporary and regularly scheduled groundwater monitoring will commence as soon as possible.

Attached is the Appendix, which contains:

- 1. A Geographical Location Map.
- 2. A map showing well locations.
- 3. A table presenting all laboratory results and depth to groundwater for each well at the site, and a graph showing recent laboratory results.
- 4. The laboratory analytical results for 2019.

Rice Operating Company appreciates the opportunity to work with you on this project. Please contact me at (575) 393-9174 or Edward Hansen at (505) 920-4965 if you have any questions or wish to further discuss this site. Thank you for your time and consideration.

Sincerely,

Katie Davis

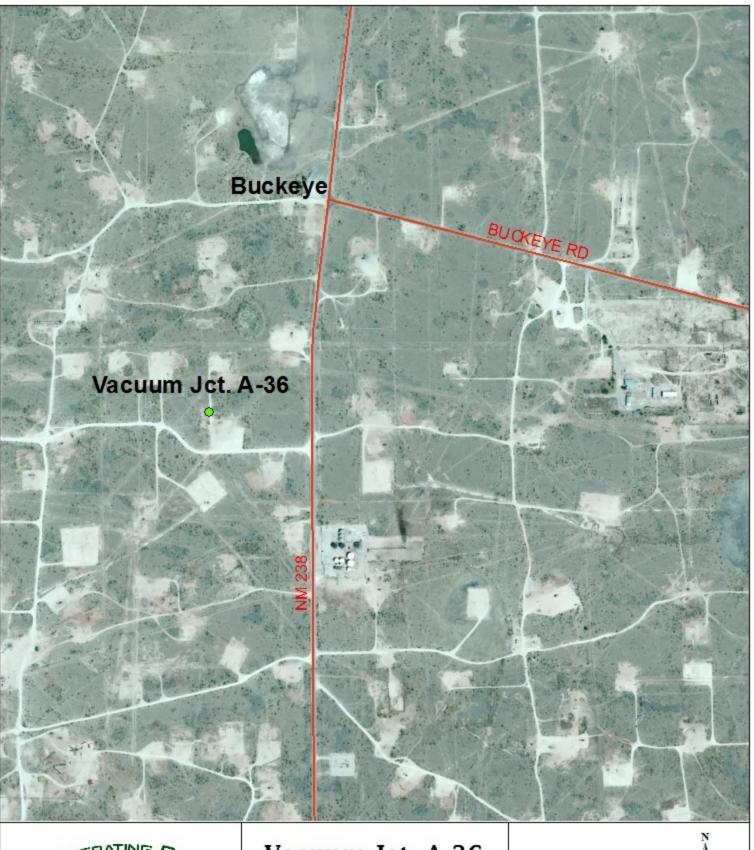
**Environmental Manager** 

Katy Davis

RICE Operating Company (ROC)

Cc – Edward J. Hansen (ROC)

appendix

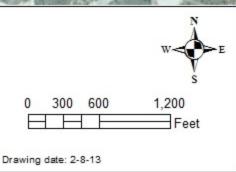




# Vacuum Jct. A-36

Unit A, Section 36, T17S, R34E

NMOCD Case #: 1R425-83



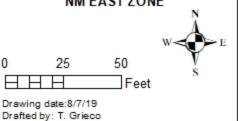
## Installed Monitor Wells





1R425-83

**UL A SECTION 36** T-17-S R-34-E LEA COUNTY, NM



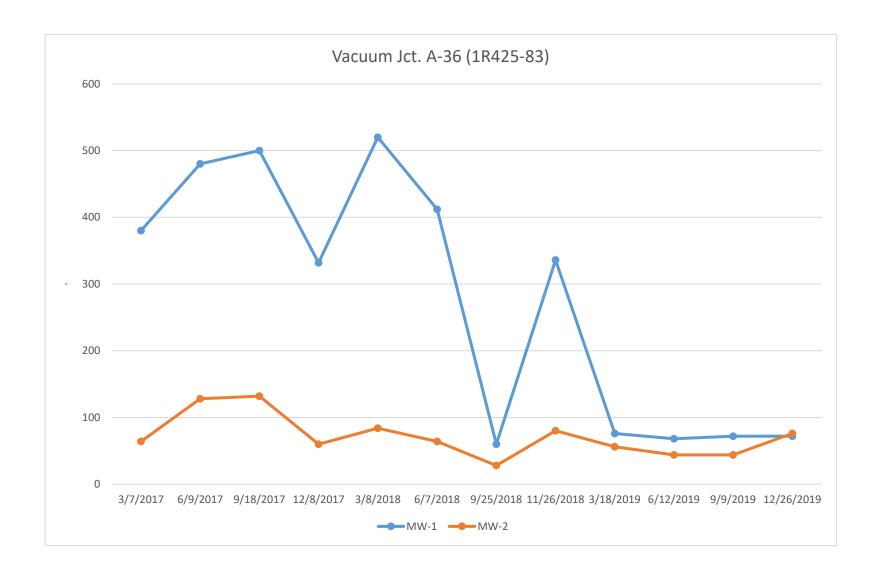
ROC - Vacuum Jct. A-36 (1R425-83) Unit Letter A, Section 36, T17S, R34E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	128.05	168	26	100	3/18/2016	332	900	<0.001	<0.001	<0.001	<0.003	62.4	Clear No odor
1	128.41	168	25.7	100	6/2/2016	420		<0.001	<0.001	<0.001	<0.003	45.4	Clear No odor
1	128.05	168	26	100	3/18/2016	332	900	<0.001	<0.001	<0.001	<0.003	62.4	Clear No odor
1	128.5	168	26	100	9/19/2016	470	1,070	<0.001	<0.001	<0.001	<0.003	33	Clear No odor
1	128.54	168	26	100	11/22/2016	288	1,020	<0.001	<0.001	<0.001	<0.003	53	Clear No odor
1	128.37	168	26	100	3/7/2017	380	860	<0.001	<0.001	<0.001	<0.003	126	Clear No odor
1	128.46	168	26	100	6/9/2017	480	1,110	<0.001	<0.001	<0.001	<0.003	63	Clear No odor
1	128.24	168	26	100	9/18/2017	500	1,320	<0.001	<0.001	<0.001	<0.003	69	Clear No odor
1	127.93	168	26	100	12/8/2017	332	958	<0.001	<0.001	<0.001	<0.003	36	Clear No odor
1	127.94	168	26	100	3/8/2018	520	1,240	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
1	128.37	168	25	100	6/7/2018	412	942	<0.001	<0.001	<0.001	<0.003	78	Clear No odor
1	128.53	168	25	100	9/25/2018	60	292	<0.001	<0.001	<0.001	<0.003	45	Clear No odor
1	128.65	168	25	100	11/26/2018	336	844	<0.001	<0.001	<0.001	<0.003	34	Clear No odor
1	128.52	168	25	100	3/18/2019	76	345	<0.001	<0.001	<0.001	<0.003	10	Clear No odor
1	128.21	168	25	100	6/12/2019	68	425	<0.001	<0.001	<0.001	<0.003	42	Clear No odor
1	129.62	168	25	100	9/9/2019	72	372	<0.001	<0.001	<0.001	<0.003	32	Clear No odor
1	130.2	168	25	100	12/26/2019	72	392	<0.001	<0.001	<0.001	<0.003	54	Clear No odor

MW	Depth to	Total	Well	Volume	Sample Date	CI	TDS	Benzene	Toluene	Ethyl	Total	Sulfate	Comments
IVIVV	Water	Depth	Volume	Purged	Sample Date	Ci	נטו	benzene	Toluelle	Benzene	Xylenes	Sullate	Comments
2	127.26	140	2	10	3/18/2016	72	452	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
2	127.71	140	2	10	6/2/2016	96	560	<0.001	<0.001	<0.001	<0.003	33.6	Clear No odor
2	127.81	140	2	10	9/19/2016	112	416	<0.001	<0.001	<0.001	<0.003	27	Clear No odor
2	127.85	140	2	10	11/22/2016	60	398	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
2	127.68	140	2	10	3/7/2017	64	404	<0.001	<0.001	<0.001	<0.003	74	Clear No odor
2	127.77	140	2	10	6/9/2017	128	558	<0.001	<0.001	<0.001	<0.003	45	Clear No odor
2	127.53	140	2	10	9/18/2017	132	526	<0.001	<0.001	<0.001	<0.003	48	Clear No odor
2	127.25	140	2	10	12/8/2017	60	330	<0.001	<0.001	<0.001	<0.003	47	Clear No odor

ROC - Vacuum Jct. A-36 (1R425-83) Unit Letter A, Section 36, T17S, R34E

MW	Depth to	Total	Well	Volume	Sample Date	Cl	TDS	Ponzono	Toluene	Ethyl	Total	Culfata	Comments
IVIVV	Water	Depth	Volume	Purged	Sample Date	C	נטו	Benzene	Toluelle	Benzene	Xylenes	Sullate	Comments
2	127.57	140	2	10	3/8/2018	84	274	<0.001	<0.001	<0.001	<0.003	46	Clear No odor
2	127.7	140	2	10	6/7/2018	64	428	<0.001	<0.001	<0.001	<0.003	68	Clear No odor
2	127.85	140	1.9	8	9/25/2018	28	218	<0.001	<0.001	<0.001	<0.003	44	Clear No odor
2	127.98	140	1.9	8	11/26/2018	80	338	<0.001	<0.001	< 0.001	<0.003	46	Clear No odor
2	127.83	140	2	10	3/18/2019	56	194	<0.001	<0.001	<0.001	<0.003	48	Clear No odor
2	128.52	140	1.8	10	6/12/2019	44	544	<0.001	<0.001	<0.001	<0.003	53	Clear No odor
2	128.71	140	1.8	10	9/10/2019	44	417	<0.001	<0.001	<0.001	<0.003	41	Clear No odor
2	129.67	140	1.7	10	12/26/2019	76	418	<0.001	<0.001	<0.001	<0.003	52	Clear No odor





March 26, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

**RE: VACUUM JUNCTION A-36** 

Enclosed are the results of analyses for samples received by the laboratory on 03/18/19 15:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> 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.

Wite Sough

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



Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/18/2019 Reported: 03/26/2019

Project Name: VACUUM JUNCTION A-36

Project Number: NONE GIVEN

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM

Sampling Date: 03/18/2019

Sampling Type: Water

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

#### Sample ID: MONITOR WELL #1 (H901041-01)

BTEX 8021B	mg/	L	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/20/2019	ND	0.020	102	0.0200	2.30	
Toluene*	< 0.001	0.001	03/20/2019	ND	0.020	98.8	0.0200	2.51	
Ethylbenzene*	< 0.001	0.001	03/20/2019	ND	0.020	97.5	0.0200	0.470	
Total Xylenes*	<0.003	0.003	03/20/2019	ND	0.063	105	0.0600	1.28	
Total BTEX	<0.006	0.006	03/20/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 81.3-12	18						
Chloride, SM4500CI-B	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	76.0	4.00	03/19/2019	ND	100	100	100	3.92	
Sulfate 375.4	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	<10.0	10.0	03/19/2019	ND	22.7	113	20.0	1.31	
TDS 160.1	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	345	5.00	03/22/2019	ND	524	99.4	527	24.2	

Cardinal Laboratories \*=Accredited Analyte

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Mile Sough



Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 03/18/2019 Reported: 03/26/2019

Project Name: VACUUM JUNCTION A-36

Project Number: NONE GIVEN

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM

Sampling Date: 03/18/2019 Sampling Type: Water

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

#### Sample ID: MONITOR WELL #2 (H901041-02)

BTEX 8021B	mg/	L	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/20/2019	ND	0.020	102	0.0200	2.30	
Toluene*	< 0.001	0.001	03/20/2019	ND	0.020	98.8	0.0200	2.51	
Ethylbenzene*	<0.001	0.001	03/20/2019	ND	0.020	97.5	0.0200	0.470	
Total Xylenes*	<0.003	0.003	03/20/2019	ND	0.063	105	0.0600	1.28	
Total BTEX	<0.006	0.006	03/20/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	6 81.3-12	8						
Chloride, SM4500Cl-B	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	56.0	4.00	03/19/2019	ND	100	100	100	3.92	
Sulfate 375.4	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	48.7	10.0	03/19/2019	ND	22.7	113	20.0	1.31	
TDS 160.1	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	194	5.00	03/22/2019	ND	524	99.4	527	24.2	

Cardinal Laboratories \*=Accredited Analyte

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MMc Songh



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

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MMc Songh

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June 20, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

**RE: VACUUM JUNCTION A-36** 

Enclosed are the results of analyses for samples received by the laboratory on 06/13/19 15:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> 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)

Celey D. Keine

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



Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 06/13/2019 Reported: 06/20/2019

Project Name:

VACUUM JUNCTION A-36

ACOUNT JUNCTION I

Project Number: NONE GIVEN
Project Location: T18S-R35E-SEC36 A-LEA CTY., NM

Sampling Date:

06/12/2019

Sampling Type: Water

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #1 (H902063-01)

BTEX 8021B	mg/	L	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/18/2019	ND	0.021	107	0.0200	0.889	
Toluene*	< 0.001	0.001	06/18/2019	ND	0.022	109	0.0200	0.536	
Ethylbenzene*	< 0.001	0.001	06/18/2019	ND	0.020	99.9	0.0200	1.37	
Total Xylenes*	< 0.003	0.003	06/18/2019	ND	0.061	101	0.0600	0.642	
Total BTEX	<0.006	0.006	06/18/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	108 %	6 81.3-12	8						
Chloride, SM4500CI-B	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	68.0	4.00	06/18/2019	ND	100	100	100	4.08	
Sulfate 375.4	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	42.6	10.0	06/19/2019	ND	20.8	104	20.0	2.43	
TDS 160.1	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	425	5.00	06/20/2019	ND	523	99.2	527	11.3	

Cardinal Laboratories \*=Accredited Analyte

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



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

Received: 06/13/2019 Reported: 06/20/2019

Project Name: VACUUM JUNCTION A-36

Project Number: NONE GIVEN

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM

Sampling Date: 06/12/2019 Sampling Type: Water

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

### Sample ID: MONITOR WELL #2 (H902063-02)

BTEX 8021B	mg/	'L	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/18/2019	ND	0.021	107	0.0200	0.889	
Toluene*	< 0.001	0.001	06/18/2019	ND	0.022	109	0.0200	0.536	
Ethylbenzene*	< 0.001	0.001	06/18/2019	ND	0.020	99.9	0.0200	1.37	
Total Xylenes*	<0.003	0.003	06/18/2019	ND	0.061	101	0.0600	0.642	
Total BTEX	<0.006	0.006	06/18/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	107 9	% 81.3-12	8						
Chloride, SM4500CI-B	mg/	'L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	44.0	4.00	06/18/2019	ND	100	100	100	4.08	
Sulfate 375.4	mg/	'L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	53.8	10.0	06/19/2019	ND	20.8	104	20.0	2.43	
TDS 160.1	mg/	'L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	544	5.00	06/19/2019	ND	523	99.2	527	11.3	

Cardinal Laboratories \*=Accredited Analyte

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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

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Celeg D. Freene

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H902063		٩	SS						Г			Ē				2	2	902		As Ba C	2	TCLP Semi Volatiles			GC/MS Vol. 8260B/624	<u>~</u>	loses l	Pesticides 8081A/608		<u>ا</u> ا	ZO		Total Dissolved Solids		je.
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September 17, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

**RE: VACUUM JUNCTION A-36** 

Enclosed are the results of analyses for samples received by the laboratory on 09/11/19 15:50.

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Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Celey D. Keine

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



Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 09/11/2019 Sa Reported: 09/17/2019 Sa

Project Name: VACUUM JUNCTION A-36

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM

NONE GIVEN

Sampling Date: 09/10/2019
Sampling Type: Water
Sampling Condition: Cool & Intac

Sample Received By:

Cool & Intact
Tamara Oldaker

## Sample ID: MONITOR WELL #1 (H903145-01)

Project Number:

BTEX 8021B	mg/	'L	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.001	0.001	09/12/2019	ND	0.021	104	0.0200	1.81	
Toluene*	< 0.001	0.001	09/12/2019	ND	0.021	104	0.0200	0.145	
Ethylbenzene*	<0.001	0.001	09/12/2019	ND	0.021	107	0.0200	0.975	
Total Xylenes*	<0.003	0.003	09/12/2019	ND	0.065	108	0.0600	1.24	
Total BTEX	<0.006	0.006	09/12/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	89.9	% 81.3-12	8						
Chloride, SM4500CI-B	mg/	'L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	72.0	4.00	09/13/2019	ND	104	104	100	0.00	
Sulfate 375.4	mg/	′L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	32.5	10.0	09/13/2019	ND	21.2	106	20.0	0.950	
TDS 160.1	mg/	'L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	372	5.00	09/16/2019	ND	532	101	527	0.269	

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Cardinal Laboratories \*=Accredited Analyte

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Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240

Fax To: (575) 397-1471

Received: 09/11/2019 Reported: 09/17/2019 Project Name:

**VACUUM JUNCTION A-36** 

Project Number: NONE GIVEN

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM Sampling Date: 09/10/2019 Sampling Type: Water

Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker

#### Sample ID: MONITOR WELL #2 (H903145-02)

BTEX 8021B	mg/	L	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.001	0.001	09/12/2019	ND	0.021	104	0.0200	1.81	
Toluene*	< 0.001	0.001	09/12/2019	ND	0.021	104	0.0200	0.145	
Ethylbenzene*	< 0.001	0.001	09/12/2019	ND	0.021	107	0.0200	0.975	
Total Xylenes*	<0.003	0.003	09/12/2019	ND	0.065	108	0.0600	1.24	
Total BTEX	<0.006	0.006	09/12/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	89.2	% 81.3-12	18						
Chloride, SM4500CI-B	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	44.0	4.00	09/13/2019	ND	104	104	100	0.00	
Sulfate 375.4	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	41.5	10.0	09/13/2019	ND	21.2	106	20.0	0.950	
TDS 160.1	mg/	L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	417	5.00	09/16/2019	ND	532	101	527	0.269	

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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

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Tel (575) 393-2326 Fax (575) 393-2476	Cardi	na	L	a	DO	)r	at	.0]		es	,	Tn	C.						LAI	B Or	der l	D#								-8			
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Project Manager:	<del></del>				Addr	_		-		(Stree	et, C	ity, Zip	)		1					(Ci	rcle	or Sp	pecif	y Me	hod	No.)							
Katie Jones			122 W	Taylo	or Stre	eet ~ I	Hobbs	, New	Mex	ico 88	8240	)								1				1									
Address: (Street, City, Zip)					Phon	e#:					F	ax#:			1				$\sim$														
122 W Taylor Street ~ Hobbs, Nev	v Mexico 88240		(575	39	3-9	174					(	(575)	397-	1471					18	1													
Phone #:		Fax #:	0 0000000000	SERVICE	U.S.										1		2)		B			- 1						- 1					
(575) 393-9174		(575)	397-	147	1												<u> </u>		60				-1	1				- 1					
	Project Name: Vacuum Junction A-3	36									1	1					nded		와 H	2													
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ula a lum					MA	TRE				SER			SAN	IPLING			TPH 418.1/TX1005 / TX1005 Extended (C35)		Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	8	332			8270C/625		88			Cations (Ca, Mg, Na, K)	5	ids		Turn Around Time ~ 24 Hours
H903145		٩	# CONTAINERS					3			T	Ω O			2	2	900		As E	2	TCLP Semi Volatiles		1	GC/MS Semi Vol. 8270		Pesticides 8081A/608		=	2 Z	2	Total Dissolved Solids		me
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ONLY		(G)rab or (C)omp	ŭ	WATER	SOIL	R	SLUDGE	HCL (2 40ml VOA)	HNO <sub>3</sub>	NaHSO <sub>4</sub>	H <sub>2</sub> SO <sub>4</sub>	ICE (1-1Liter HDPE) NONE	DATE (2019)	TIME	MTBE	BTEX 8021B/602	H	PAH	la la	TCLP Volatiles	Ӹ	TCLP Pesticides	IS S	GC/MS Semi Vol	PCB's 8082/608	esti	BOD, TSS, pH	Moisture Content	atic	Sulfates	otal	Chlorides	un
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January 02, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

**RE: VACUUM JUNCTION A-36** 

Enclosed are the results of analyses for samples received by the laboratory on 12/27/19 11:25.

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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> 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.

Celey D. Keine

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



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

Received: 12/27/2019 Reported: 01/02/2020

Project Name: VACUUM JUNCTION A-36

Project Number: NONE GIVEN

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM

Sampling Date: 12/26/2019

Sampling Type: Water

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

#### Sample ID: MONITOR WELL #1 (H904300-01)

BTEX 8021B	mg/	L	Analyze	d By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Benzene*	< 0.001	0.001	12/31/2019	ND	0.019	94.3	0.0200	0.980			
Toluene*	< 0.001	0.001	12/31/2019	ND	0.018	92.4	0.0200	1.90			
Ethylbenzene*	<0.001	0.001	12/31/2019	ND	0.018	89.4	0.0200	1.53			
Total Xylenes*	<0.003	0.003	12/31/2019	ND	0.053	88.6	0.0600	1.83			
Total BTEX	<0.006 0.006		12/31/2019	ND							
Surrogate: 4-Bromofluorobenzene (PID	102 %	% 58.2-13	3								
Chloride, SM4500Cl-B	mg/	L	Analyze	d By: AC							
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride*	<b>72.0</b> 4.00		12/27/2019	ND	104	104	100	3.77			
Sulfate 375.4	mg/	L	Analyze	d By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Sulfate*	54.5	<b>54.5</b> 10.0 12/3		ND	20.6	103	20.0	2.49			
TDS 160.1	mg/	L	Analyze	d By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		

Cardinal Laboratories \*=Accredited Analyte

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

Received: 12/27/2019 Reported: 01/02/2020 Project Name:

**VACUUM JUNCTION A-36** 

Project Number: NONE GIVEN

Project Location: T18S-R35E-SEC36 A-LEA CTY., NM Sampling Date: 12/26/2019 Sampling Type: Water

Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker

#### Sample ID: MONITOR WELL #2 (H904300-02)

BTEX 8021B	mg/	L	Analyze	d By: MS									
Analyte	Analyte Result		Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Benzene*	< 0.001	0.001	12/31/2019	ND	0.019	94.3	0.0200	0.980					
Toluene*	< 0.001	0.001	12/31/2019	ND	0.018	92.4	0.0200	1.90					
Ethylbenzene*	< 0.001	0.001	12/31/2019	ND	0.018	89.4	0.0200	1.53					
Total Xylenes*	<0.003	0.003	12/31/2019	ND	0.053	88.6	0.0600	1.83					
Total BTEX	<0.006 0.006		12/31/2019	ND									
Surrogate: 4-Bromofluorobenzene (PID	rogate: 4-Bromofluorobenzene (PID 80.5 % 58.2-1		3										
Chloride, SM4500Cl-B	mg/	L	Analyze	d By: AC									
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier				
Chloride*	<b>76.0</b> 4.00		12/27/2019	ND	104	104	100	3.77					
Sulfate 375.4	mg/	L	Analyze	d By: AC									
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier				
Sulfate*	52.4	10.0	12/30/2019	ND	20.6	103	20.0	2.49					
TDS 160.1	mg/	L	Analyze	d By: AC									
		Result Reporting Limit											
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier				

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ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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101 East Marland - Hobbs, NM 88240 Tel (575) 393-2326 Eav (575) 393-2476 Cardinal Laboratories, Inc.								CHAIN-OF-CUSTODY AND ANALYSIS REQUEST																										
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Katie Jones		122 W Taylor Street ~ Hobbs, New Mexico 88240																			- 1				1		П							
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