

# **RICE** *Operating Company*

112 West Taylor • Hobbs, New Mexico 88240

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

**April 1, 2020**

## **Bradford Billings**

New Mexico Oil Conservation Division

1220 So. St. Francis Drive

Santa Fe, New Mexico 87505

**RE: 2019 Annual Groundwater Report**

**Rice Operating Company – BD SWD System**

**BD H-35 Emergency Overflow Pit (AP-71): UL/H, Section 35, T22S, R37E**

Mr. Billings:

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

The site is located approximately 6.5 miles southeast of Eunice, New Mexico at UL/H, Section 35, T22S, R37E as shown on the Geographical Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 44 ft below ground surface (bgs).

One monitoring well was installed on December 21<sup>st</sup>, 2005, following the approval of the Investigation and Characterization Work Plan on November 9<sup>th</sup>, 2004. The well has been sampled quarterly since installation, with chloride concentrations averaging 1,683 mg/L in 2019.

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 MW-1, 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,

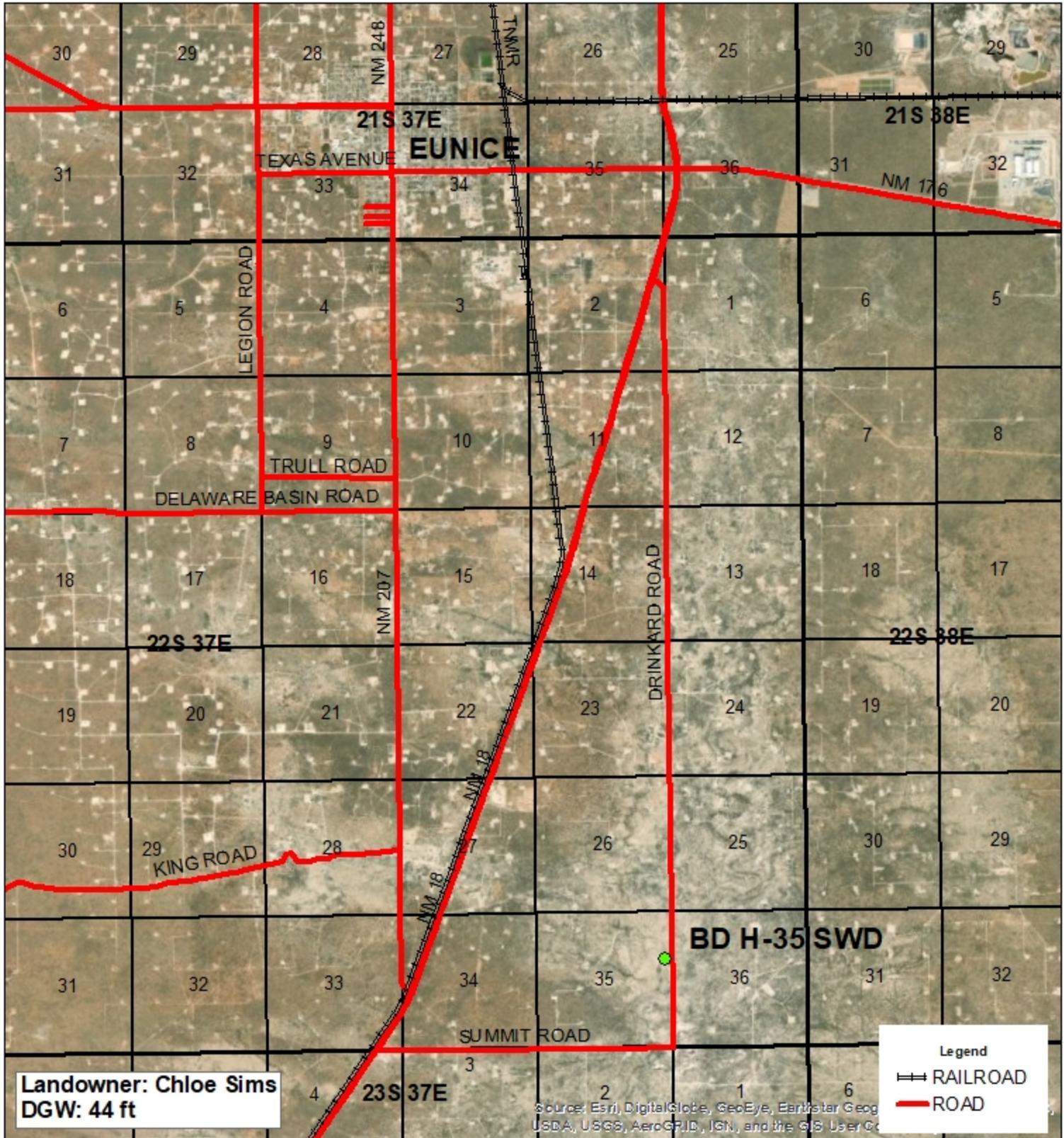
A handwritten signature in black ink that reads "Katie Davis". The signature is written in a cursive, flowing style.

Katie Davis  
Environmental Manager  
RICE Operating Company (ROC)

Cc – Edward J. Hansen (ROC)

appendix

# Geographic Location



Landowner: Chloe Sims  
DGW: 44 ft

**Legend**  
 RAILROAD  
 ROAD



**BD H-35 SWD  
EMERGENCY  
OVERFLOW PIT**  
AP-71

UL H SECTION 35  
T-22-S R-37-E  
LEA COUNTY, NM

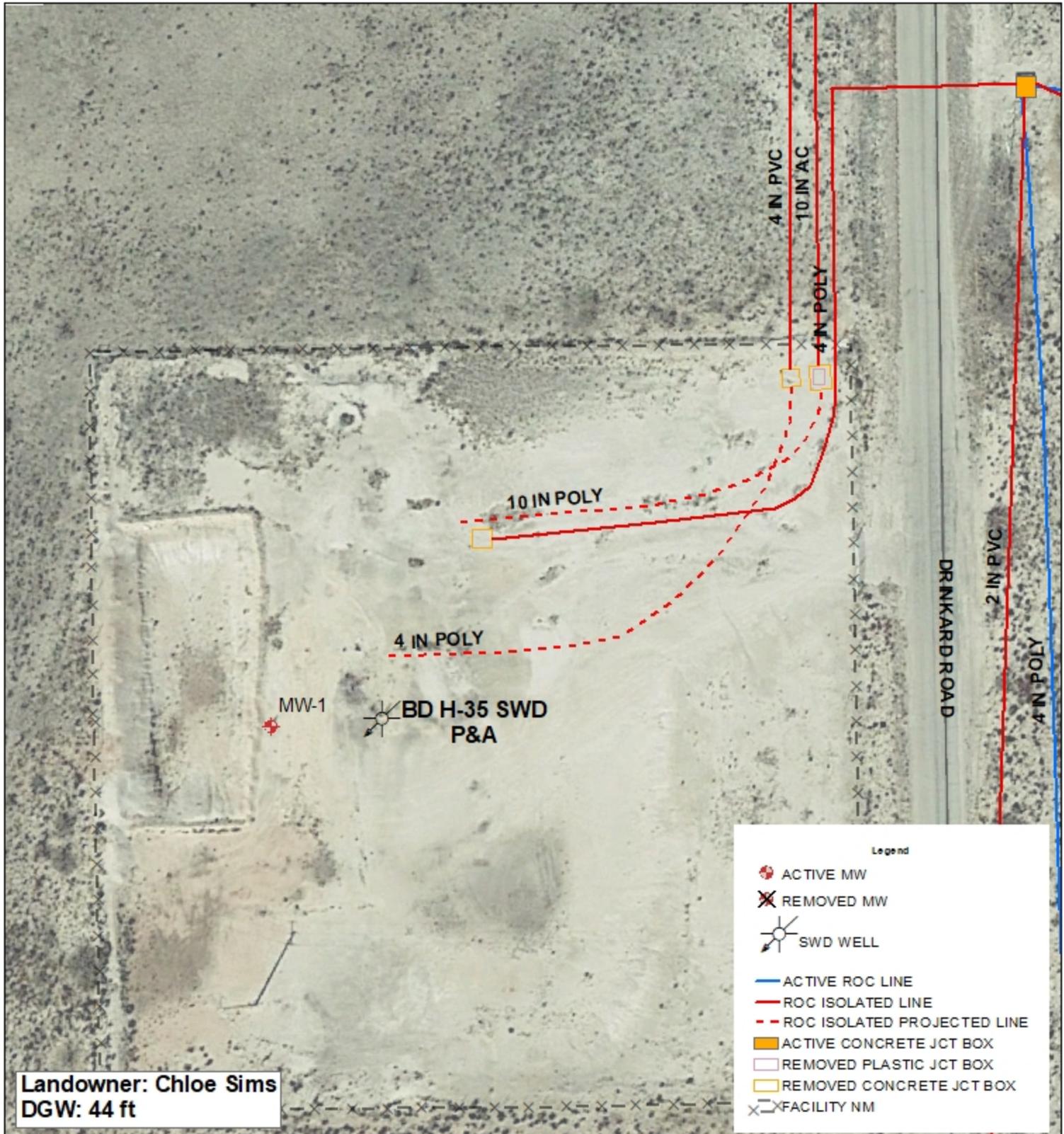
GPS: 32.350497 -103.125984  
NAD 83 STATE PLANE PROJ  
NM EAST ZONE

0 0.5 1  
 Miles



Drawing date: 31/28/20  
Drafted by: T. Grieco

# Site Map



Landowner: Chloe Sims  
DGW: 44 ft



**BD H-35 SWD  
EMERGENCY  
OVERFLOW PIT**

AP-71

UL H SECTION 35  
T-22-S R-37-E  
LEA COUNTY, NM

GPS: 32.350497 -103.125984  
NAD 83 STATE PLANE PROJ  
NM EAST ZONE

0 25 50  
Feet

Drawing date: 2/3/20  
Drafted by: T. Grieco

ROC - BD H-35 (AP-71)

Unit Letter H, Section 35, T22S, R37E

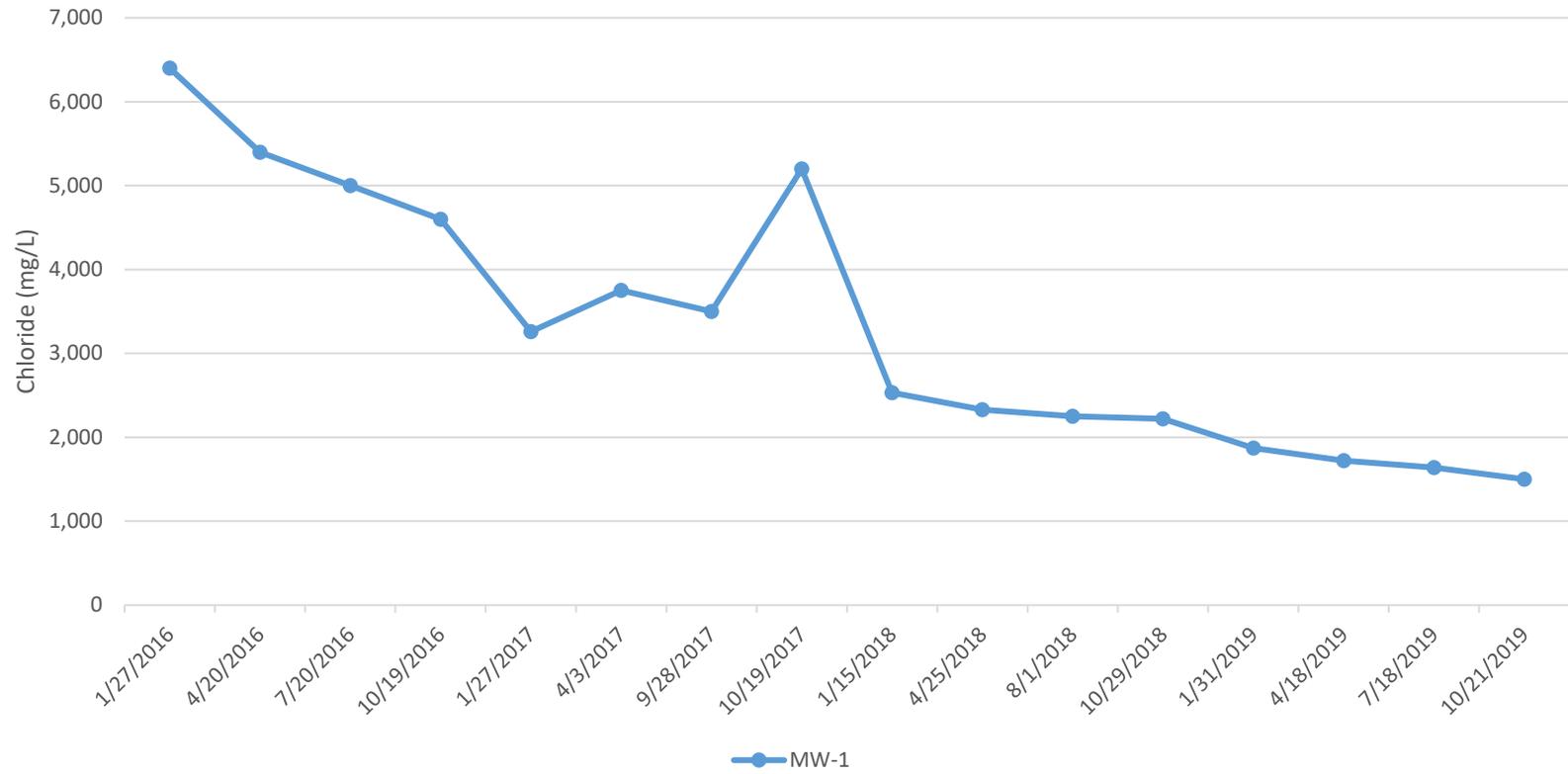
MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	43.64	57.2	8.8	30	1/4/2006	1,880	4,290	<0.001	<0.001	<0.001	<0.001	383	Clear No odor
1	43.79	57.2	8.7	30	4/24/2006	2,360	5,380	<0.001	<0.001	<0.001	<0.001	405	XXX
1	43.92	57.2	8.6	35	7/19/2006	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
1	43.83	57.2	8.7	30	10/11/2006	2,880	7,460	<0.001	<0.001	<0.001	<0.001	561	clear
1	44.1	57.16	8.5	30	1/25/2007	3,240	5,300	<0.001	<0.001	<0.001	<0.001	556	XXX
1	44.2	57.16	8.4	30	4/4/2007	3,220	8,680	<0.001	<0.001	<0.001	<0.001	381	XXX
1	43.99	57.16	8.6	30	8/24/2007	4,749	12,345	0.003	0.003	0.003	0.008	565	Clear No odor
1	44.13	57.16	8.5	30	10/31/2007	3,400	7,028	<0.002	<0.002	<0.002	<0.006	499	Clear No odor
1	44.22	57.2	8.4	30	1/15/2008	4,800	9,194	<0.001	<0.001	<0.001	<0.003	665	Clear No odor
1	44.26	57.2	8.4	30	4/7/2008	4,600	9,350	<0.001	<0.001	<0.001	<0.003	888	Clear No odor
1	44.34	57.2	8.4	30	7/22/2008	4,400	9,580	<0.002	<0.002	<0.002	<0.006	714	Clear No odor
1	44.4	57.2	8.3	30	10/2/2008	3,950	9,350	<0.001	<0.001	<0.001	<0.003	675	Clear No odor
1	44.47	57.2	8.3	30	1/14/2009	3,650	7,600	<0.001	<0.001	<0.001	<0.003	657	Clear No odor
1	44.52	57.2	8.2	30	4/14/2009	3,400	6,550	<0.001	<0.001	<0.001	<0.003	629	Clear No odor
1	44.56	57.23	8.2	30	7/13/2009	2,380	4,800	<0.001	<0.001	<0.001	<0.003	522	Clear No odor
1	44.62	57.23	8.2	30	10/7/2009	3,050	6,900	<0.001	<0.001	<0.001	<0.003	519	Clear No odor
1	44.66	57.23	8.2	30	1/13/2010	3,050	6,300	<0.001	<0.001	<0.001	<0.003	490	Clear No odor
1	44.68	57.23	8.2	30	4/9/2010	2,850	5,480	<0.001	<0.001	<0.001	<0.003	618	Clear No odor
1	44.6	57.23	8.2	30	7/9/2010	2,650	4,970	<0.001	<0.001	<0.001	<0.003	526	Clear No odor
1	44.55	57.23	8.2	30	10/7/2010	2,750	6,430	<0.001	<0.001	<0.001	<0.003	512	Clear No odor
1	44.76	57.24	8.1	30	1/13/2011	2,650	5,160	<0.001	<0.001	<0.001	<0.003	598	Clear No odor
1	44.77	57.24	8.1	30	4/11/2011	3,050	5,480	<0.001	<0.001	<0.001	<0.003	567	Clear No odor
1	44.86	57.24	8	30	7/13/2011	4,050	6,590	<0.001	<0.001	<0.001	<0.003	597	Clear No odor
1	44.94	57.24	8	30	10/12/2011	3,400	5,890	<0.001	<0.001	<0.001	<0.003	607	Clear No odor
1	44.99	57.24	8	30	1/17/2012	2,470	5,070	<0.001	<0.001	<0.001	<0.003	558	Clear No odor
1	45.08	57.24	7.9	30	4/16/2012	2,570	5,100	<0.001	<0.001	<0.001	<0.003	437	Clear No odor
1	45.1	57.24	7.9	30	7/12/2012	2,430	4,940	<0.001	<0.001	<0.001	<0.003	504	Clear No odor
1	45.12	57.24	7.9	30	10/4/2012	2,700	5,380	<0.001	<0.001	<0.001	<0.003	615	Clear No odor
1	45.18	57.24	7.8	30	1/7/2013	2,200	4,290	<0.001	<0.001	<0.001	<0.003	501	Clear No odor

**ROC - BD H-35 (AP-71)**

**Unit Letter H, Section 35, T22S, R37E**

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	45.25	57.24	7.8	30	4/18/2013	2,080	4,100	<0.001	<0.001	<0.001	<0.003	504	Clear No odor
1	45.24	57.24	7.8	30	7/15/2013	1,980	4,240	XXX	XXX	XXX	XXX	456	Clear No odor
1	45.32	57.24	7.7	30	10/16/2013	1,800	4,080	XXX	XXX	XXX	XXX	418	Clear No odor
1	45.37	57.24	7.7	30	1/15/2014	2,000	3,680	XXX	XXX	XXX	XXX	401	Clear No odor
1	45.44	57.24	7.7	30	4/4/2014	1,970	3,890	XXX	XXX	XXX	XXX	363	Clear No odor
1	45.45	57.24	7.7	30	7/15/2014	1,660	4,360	XXX	XXX	XXX	XXX	224	Clear No odor
1	42.22	57.24	9.8	100	12/16/2014	13,800	24,600	XXX	XXX	XXX	XXX	1610	Clear No odor
1	42.19	57.24	9.8	100	1/30/2015	9,600	16,800	XXX	XXX	XXX	XXX	1110	Clear No odor
1	42.47	57.24	9.6	100	4/20/2015	6,700	12,700	XXX	XXX	XXX	XXX	629	Clear No odor
1	42.18	57.24	9.79	100	7/20/2015	5,900	10,800	XXX	XXX	XXX	XXX	497	Clear No odor
1	43.03	57.24	9.24	100	10/21/2015	5,800	11,000	XXX	XXX	XXX	XXX	621	Clear No odor
1	43.08	57.24	9.2	100	1/27/2016	6,400	11,000	XXX	XXX	XXX	XXX	644	Clear No odor
1	43.26	57.24	9.1	100	4/20/2016	5,400	9,600	XXX	XXX	XXX	XXX	586	Clear No odor
1	43.39	57.24	9.1	100	7/20/2016	5,000	9,960	XXX	XXX	XXX	XXX	615	Clear No odor
1	43.25	57.24	9.1	100	10/19/2016	4,600	8,180	XXX	XXX	XXX	XXX	765	Clear No odor
1	43.43	57.24	8.9	100	1/27/2017	3,260	7,210	XXX	XXX	XXX	XXX	755	Clear No odor
1	43.48	57.24	8.9	100	4/3/2017	3,750	6,550	XXX	XXX	XXX	XXX	678	Clear No odor
1	43.47	57.24	9	100	9/28/2017	3,500	7,160	XXX	XXX	XXX	XXX	690	Clear No odor
1	43.46	57.24	9	100	10/19/2017	5,200	9,020	XXX	XXX	XXX	XXX	332	Clear No odor
1	43.45	57.24	9	100	1/15/2018	2,530	5,310	XXX	XXX	XXX	XXX	632	Clear No odor
1	43.92	57.24	8.7	100	4/25/2018	2,330	4,980	XXX	XXX	XXX	XXX	528	Clear No odor
1	44.03	57.24	8.6	100	8/1/2018	2,250	4,620	XXX	XXX	XXX	XXX	493	Clear No odor
1	44.07	57.24	8.6	100	10/29/2018	2,220	3,900	XXX	XXX	XXX	XXX	469	Clear No odor
1	44.08	57.24	9	100	1/31/2019	1,870	3,600	XXX	XXX	XXX	XXX	408	Clear No odor
1	44.2	57.24	9	100	4/18/2019	1,720	3,610	XXX	XXX	XXX	XXX	461	Clear No odor
1	44.27	57.24	9	100	7/18/2019	1,640	3,570	XXX	XXX	XXX	XXX	495	Clear No odor
1	44.33	57.24	9	100	10/21/2019	1,500	3,070	XXX	XXX	XXX	XXX	452	Clear No odor

### BD H-35 (AP-71)



February 08, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD H-35 SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/05/19 12:56.

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 [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/05/2019	Sampling Date:	01/31/2019
Reported:	02/08/2019	Sampling Type:	Water
Project Name:	BD H-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S R37E SEC35 H-LEA CTY., NM		

**Sample ID: MONITOR WELL #1 (H900421-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>1870</b>	4.00	02/06/2019	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	
<b>Sulfate*</b>	<b>408</b>	83.3	02/07/2019	ND	20.2	101	20.0	5.57		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>3600</b>	5.00	02/07/2019	ND	191	93.6	204	18.4		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### 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



---

Celey D. Keene, Lab Director/Quality Manager



May 01, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD H-35 SWD

Enclosed are the results of analyses for samples received by the laboratory on 04/24/19 13:55.

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 [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/24/2019	Sampling Date:	04/18/2019
Reported:	05/01/2019	Sampling Type:	Water
Project Name:	BD H-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC35 H-LEA CTY., NM		

**Sample ID: MONITOR WELL #1 (H901460-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>1720</b>	4.00	04/30/2019	ND	108	108	100	3.77		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Sulfate*</b>	<b>461</b>	83.3	04/29/2019	ND	21.7	109	20.0	1.16		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>3610</b>	5.00	04/26/2019	ND	519	98.5	527	0.484		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
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- \*\* 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



---

Celey D. Keene, Lab Director/Quality Manager



July 29, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD H-35 SWD

Enclosed are the results of analyses for samples received by the laboratory on 07/23/19 14:15.

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 [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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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)

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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

**Analytical Results For:**

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

Received:	07/23/2019	Sampling Date:	07/18/2019
Reported:	07/29/2019	Sampling Type:	Water
Project Name:	BD H-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC35 H-LEA CTY., NM		

**Sample ID: MONITOR WELL #1 (H902533-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride*</b>	<b>1640</b>	4.00	07/24/2019	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Sulfate*</b>	<b>495</b>	250	07/29/2019	ND	24.0	120	20.0	8.47		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>TDS*</b>	<b>3570</b>	5.00	07/25/2019	ND	516	97.9	527	2.51		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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---

Celey D. Keene, Lab Director/Quality Manager



October 29, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD H-35 SWD

Enclosed are the results of analyses for samples received by the laboratory on 10/24/19 14:55.

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

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Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/24/2019	Sampling Date:	10/21/2019
Reported:	10/29/2019	Sampling Type:	Water
Project Name:	BD H-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC35 H-LEA CTY., NM		

**Sample ID: MONITOR WELL #1 (H903650-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride*</b>	<b>1500</b>	4.00	10/25/2019	ND	100	100	100	3.92	
Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Sulfate*</b>	<b>452</b>	125	10/25/2019	ND	23.9	120	20.0	10.7	
TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>TDS*</b>	<b>3070</b>	5.00	10/28/2019	ND	517	98.1	527	5.18	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**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



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Celey D. Keene, Lab Director/Quality Manager

