1/29/2020

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

Receipt of Fee Application Payment

PO Number: 70MIY-200129-C-1410

Payment Date:	1/29/2020 2:22:30 PM
Payment Amount:	$150.00
Payment Type:	Credit Card

Application Type:	Application for administrative approval of a release notification and corrective action.
Fee Amount:	$150.00
Application Status:	Pending Document Delivery

OGRID:	19174
First Name:	Katie
Last Name:	Davis
Email:	kjones@riceswd.com

IMPORTANT: If you are mailing or delivering your application, you must print and include your receipt of payment as the first page on your application. All mailed and delivered applications must be sent to the following address: 1220 S. St. Francis Dr., Santa Fe, NM 87505. For inquiries, reference the PO Number listed above.

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

January 21, 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: **Corrective Action Plan (CAP) and Variance Request**
Rice Operating Company – BD SWD System
BD C-28 EOL (Pogo Manda EOL) (1R426-219): UL/C, Sec. 28, T22S, R37E

Mr. Billings:

RICE Operating Company (ROC) submits the following to address potential environmental concerns at the above-referenced site in the BD Salt Water Disposal (SWD) system.

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

Background and Previous Work
The site is located approximately 4 miles south of Eunice, New Mexico at UL/C, Sec. 28, T22S, R37E as shown on the Geographical Location Map and the Site Map. NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 75 feet below ground surface (bgs). A junction box disclosure report was submitted to NMOCD with all the 2007 junction box closures and disclosures.

In 2007, ROC initiated work on the former C-28 EOL junction box. The site was delineated using a backhoe to form a 30 ft x 30 ft x 12 ft deep excavation and soil samples were screened at regular intervals for hydrocarbons and chlorides. From the excavation, a 4-wall composite sample and a bottom composite sample and a remediated soils sample were sent to a commercial laboratory for analysis. The 4-wall composite returned a chloride reading of 1,220 mg/kg and a Gasoline Range Organics (GRO) reading non-detect and a Diesel Range Organics (DRO) reading of non-detect. The bottom composite sample returned a chloride reading of 1,180 mg/kg, a GRO reading of non-detect and a DRO reading of non-detect. The excavated soil was blended on site and a representative sample was sent to a commercial laboratory for analysis. The sample returned a chloride reading of 976 mg/kg, a GRO reading of non-detect and a DRO

January 21, 2020

reading of non-detect. The excavation was backfilled with blended soils (36 cubic feet was disposed of at an OCD-approved facility), then a one-foot compacted clay liner was installed at 6 feet bgs and the remainder of the excavation was backfilled with the blended soil. Imported clean soils were used to top the excavation and contoured to the surrounding area. A new water-tight junction box was installed 100 feet south of the site.

To further investigate the depth of chloride presence, seven soil bores were installed (see Soil Bore Installation Plat) on August 28 and 30, 2018, April 24, 2019, and June 24, 2019. Soil bore (SB-1) was installed 20 ft east of the former junction box site and was advanced to a depth of 25 ft bgs. Soil samples were collected every 5 ft and each sample was field titrated for chloride and field screened for PIDs. The 15 ft and 25 ft samples were sent to a commercial laboratory for analysis, resulting in a 15 ft chloride concentration of 1,070 mg/kg and GRO and DRO and Extended DRO (EXT-DRO) and total BTEX concentrations of non-detect. The 25 ft sample resulted in a chloride concentration of 368 mg/kg and GRO and DRO and EXT-DRO concentrations of non-detect. Soil bore (SB-2) was installed 20 ft northeast of the former junction box site and was advanced to a depth of 70 ft bgs. Soil samples were collected every 5 ft and each sample was field titrated for chloride and field screened for PIDs. The 60 ft and 70 ft samples were sent to a commercial laboratory for analysis, resulting in a 60 ft chloride concentration of 1,180 mg/kg and GRO and DRO and Extended DRO (EXT-DRO) concentrations of non-detect. The 70 ft sample resulted in a chloride concentration of 1,070 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. Soil bore (SB-3) was installed 20 ft west of the former junction box site and was advanced to a depth of 70 ft bgs. Soil samples were collected every 5 ft and each sample was field titrated for chloride and field screened for PIDs. The 45 ft and 70 ft samples were sent to a commercial laboratory for analysis, resulting in a 45 ft chloride concentration of 1,780 mg/kg and GRO and DRO and Extended DRO (EXT-DRO) concentrations of non-detect. The 70 ft sample resulted in a chloride concentration of 608 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. Soil bore (SB-4) was installed 40 ft south of the former junction box site and was advanced to a depth of 25 ft bgs. Soil samples were collected every 5 ft and each sample was field titrated for chloride and field screened for PIDs. The 15 ft and 25 ft samples were sent to a commercial laboratory for analysis, resulting in a 15 ft chloride concentration of 832 mg/kg and GRO and DRO and Extended DRO (EXT-DRO) and total BTEX concentrations of non-detect. The 25 ft sample resulted in a chloride concentration of 224 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. Soil bore (SB-5) was installed 35 ft north of the former junction box site and was advanced to a depth of 20 ft bgs. Soil samples were collected every 5 ft and each sample was field titrated for chloride and field screened for PIDs. The 15 ft and 20 ft samples were sent to a commercial laboratory for analysis, resulting in a 15 ft chloride concentration of 1,300 mg/kg and GRO and DRO and Extended DRO (EXT-DRO) and total BTEX concentrations of non-detect. The 25 ft sample resulted in a chloride concentration of 256 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. Soil bore (SB-6) was installed 30 ft east of the former junction box site and was advanced to a depth of 60 ft bgs. Soil samples were collected every 5

January 21, 2020

ft and each sample was field titrated for chloride and field screened for PIDs. The 5 ft and10 ft and 60 ft samples were sent to a commercial laboratory for analysis, resulting in a 5 ft chloride concentration of 1,890 mg/kg and GRO and DRO and Extended DRO (EXT-DRO) and total BTEX concentrations of non-detect. The 10 ft sample resulted in a chloride concentration of 7,040 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. The 60 ft sample resulted in a chloride concentration of 2,960 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. Soil bore (SB-7) was installed 50 ft north of the former junction box site and was advanced to a depth of 15 ft bgs. Soil samples were collected every 5 ft and each sample was field titrated for chloride and field screened for PIDs. The 10 ft and 15 ft samples were sent to a commercial laboratory for analysis, resulting in a 10 ft chloride concentration of 832 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. The 15 ft sample resulted in a chloride concentration of 400 mg/kg and GRO and DRO and EXT-DRO and total BTEX concentrations of non-detect. All seven of the entire boreholes were plugged with bentonite to the ground surface.

Corrective Action Plan

Based on the collected soil data, the site has been delineated to the concentrations listed in Table 1 of 19.15.29.12 NMAC to the north, south, and east. Chloride concentrations to the west increased in SB-3 and again in SB-6. The highest chloride concentrations observed at the site were found in SB-6, which is the soil bore furthest west from the source and closest to the non-ROC facility. This suggests the soil in that area have been impacted by the non-ROC facility.

To remediate the upper 4 ft of the impacted area, ROC proposes to install a 20-mil, reinforced liner at a depth of 4.5-5 ft bgs in the site area (70 feet x 115 feet covering approximately 8,050 sq ft). ROC will collect a 5-point composite from each wall and combine into a 4-wall composite sample. Samples will not be collected from the base of the excavation because the proposed liner will mitigate the downward migration of any remaining constituents. The excavation will be backfilled to ground surface with soils containing a chloride concentration below 600 mg/kg. Excavated soil will be evaluated for use as backfill (one sample per 100 cubic yards) and any soils that do not meet requirements will be properly disposed of at a NMOCD approved facility. The excavation will be backfilled to ground surface and contoured to the surrounding location.

The soils over and surrounding the site will then be prepared with soil amendments as necessary and seeded with a native vegetative mix. Vegetation above the liner will also provide a natural infiltration barrier for the site since plants capture water through their roots thereby reducing the volume of water moving through the vadose zone.

Variance Request

ROC is requesting a variance in accordance with Section 14 of NMOCD Part 29. The variance request is for requirements of Paragraph (2) of Section 12 of Part 29. Samples taken at 70 bgs in several boring at the site returned a laboratory analysis of chloride concentrations of >600 mg/kg (i.e., above the remediation standard of 600 mg/kg for chloride). The variance is needed because

January 21, 2020

of the prohibitive nature of excavating the site at a depth of over 70 bgs and remote disposal and backfilling with imported soils. Approval of the variance will provide equal or better protection of fresh water, public health and the environment. To determine if the residual chloride in the vadose zone pose a threat to groundwater quality, ROC ran the U.S. Environmental Protection Agency Exposure Assessment Multimedia Model (MULTIMED Version 1.5, 2005). The model output concludes that the peak concentration of chloride in groundwater contributed by the vadose zone soils would be approximately 239 mg/L in 35 years (based on boring data) with liner installation compared to approximately 304 mg/L in 9.5 years of the regulatory standard of 600 mg/Kg without a liner being installed. Based on the MULTIMED analysis and the concentration data, ROC requests approval of the variance. Additionally, the TPH concentrations were non-detect throughout the site.

Once the liner installation, backfill and seeding are complete, ROC will submit a remediation termination request for site closure.

Please contact me at (575) 393-9174 or Edward Hansen at (505) 920-4965 if you have any questions or wish to discuss this site. Thank you for your time and consideration.

Sincerely,

Katie Davis

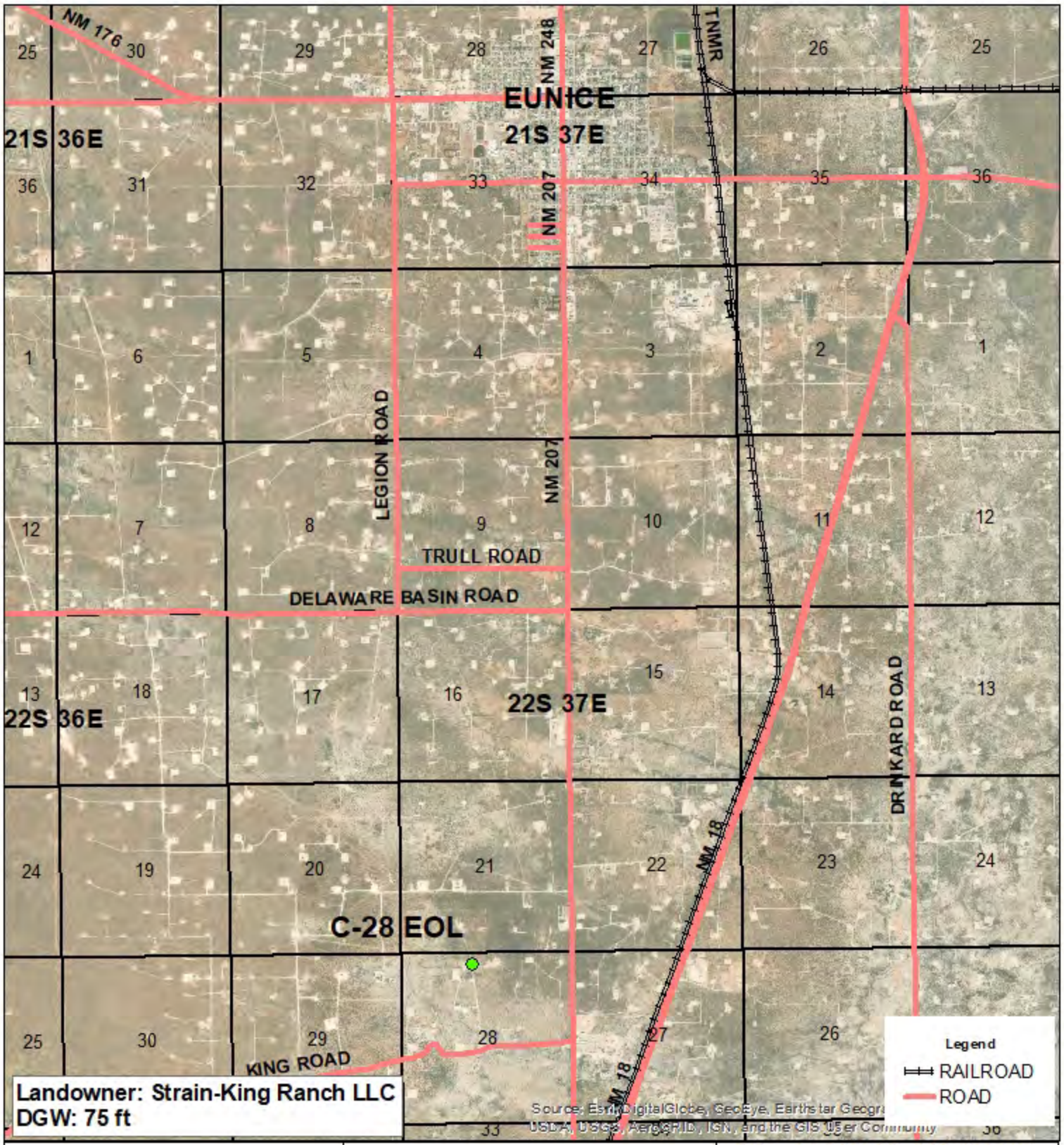
Katie Davis
Environmental Manager
RICE Operating Company (ROC)

appendix

Figures

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

Geographic Location



RICE OPERATING COMPANY
ROC
SINCE 1955

BD
C-28 EOL
1R426-219

UL C SECTION 28
T-22-S R-37-E
LEA COUNTY, NM

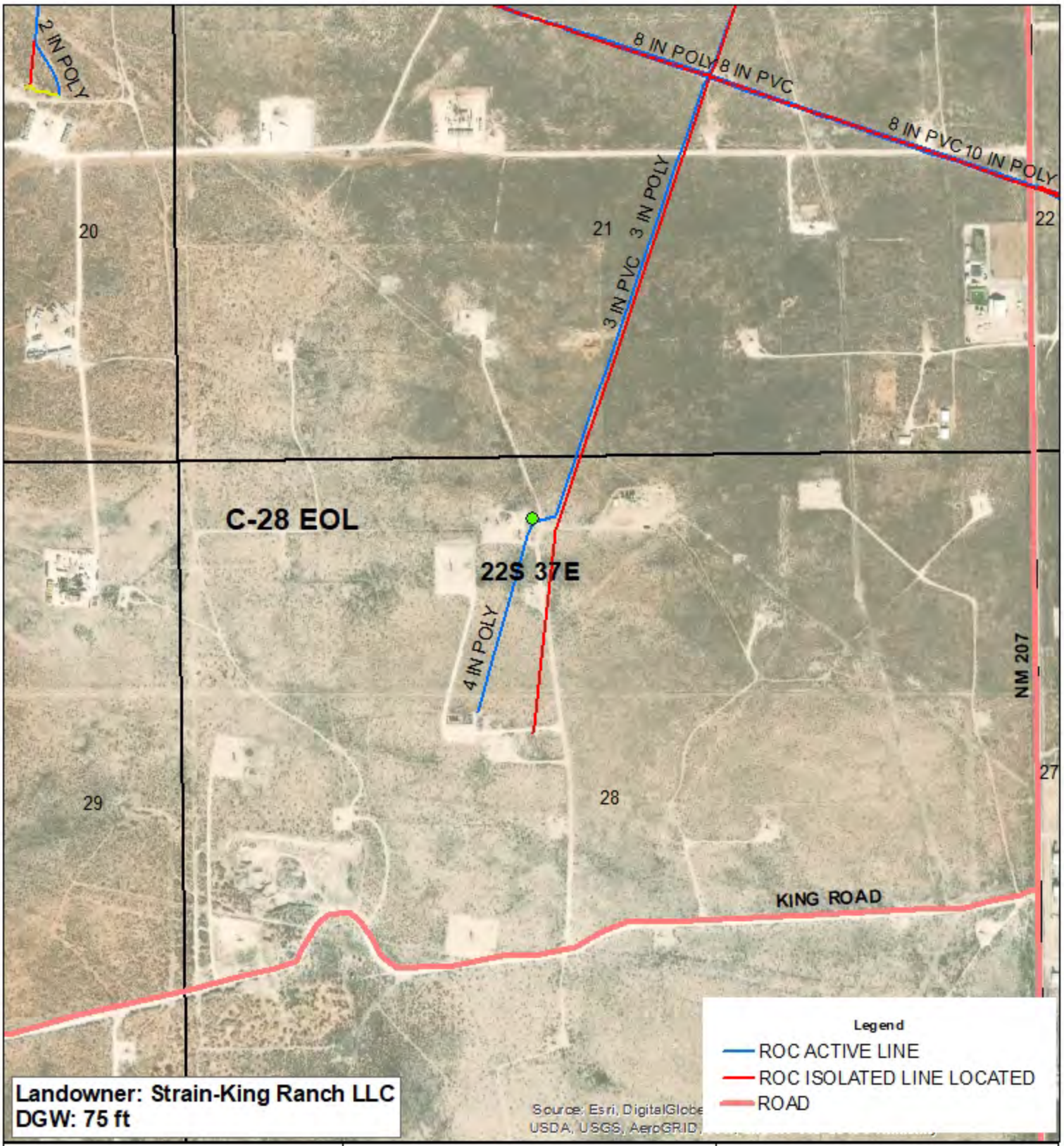
GPS: 32.369055 -103.169415
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 0.5 1
Miles

N
W E
S

Drawing date: 9/24/19
Drafted by: T. Grieco

Area Map



RICE OPERATING COMPANY
ROC
SINCE 1955

BD
C-28 EOL
1R426-219

UL C SECTION 28
T-22-S R-37-E
LEA COUNTY, NM

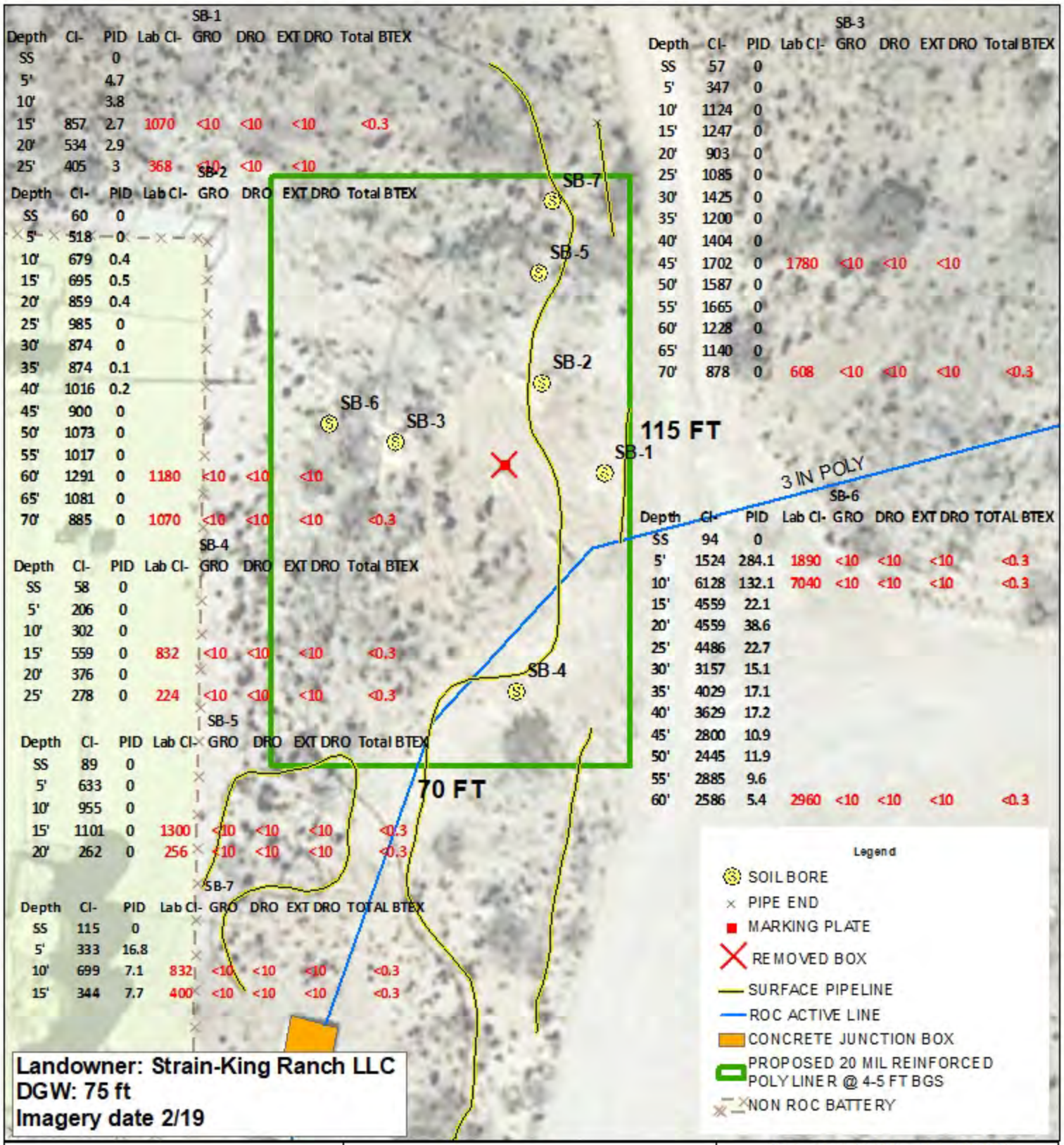
GPS: 32.369055 -103.169415

0 500 1,000
Feet

N
W E
S

Drawing date: 5/30/18
Drafted by: T. Grieco

Soil Bore Installation



SB-1

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	Total BTEX
SS		0					
5'		4.7					
10'		3.8					
15'	857	2.7	1070	<10	<10	<10	<0.3
20'	534	2.9					
25'	405	3	368	<10	<10	<10	

SB-2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	Total BTEX
SS	60	0					
5'	518	0					
10'	679	0.4					
15'	695	0.5					
20'	859	0.4					
25'	985	0					
30'	874	0					
35'	874	0.1					
40'	1016	0.2					
45'	900	0					
50'	1073	0					
55'	1017	0					
60'	1291	0	1180	<10	<10	<10	
65'	1081	0					
70'	885	0	1070	<10	<10	<10	<0.3

SB-3

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	Total BTEX
SS	57	0					
5'	347	0					
10'	1124	0					
15'	1247	0					
20'	903	0					
25'	1085	0					
30'	1425	0					
35'	1200	0					
40'	1404	0					
45'	1702	0	1780	<10	<10	<10	
50'	1587	0					
55'	1665	0					
60'	1228	0					
65'	1140	0					
70'	878	0	608	<10	<10	<10	<0.3

SB-4

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	Total BTEX
SS	58	0					
5'	206	0					
10'	302	0					
15'	559	0	832	<10	<10	<10	<0.3
20'	376	0					
25'	278	0	224	<10	<10	<10	<0.3

SB-5

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	Total BTEX
SS	89	0					
5'	633	0					
10'	955	0					
15'	1101	0	1300	<10	<10	<10	<0.3
20'	262	0	256	<10	<10	<10	<0.3

SB-6

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	TOTAL BTEX
SS	94	0					
5'	1524	284.1	1890	<10	<10	<10	<0.3
10'	6128	132.1	7040	<10	<10	<10	<0.3
15'	4559	22.1					
20'	4559	38.6					
25'	4486	22.7					
30'	3157	15.1					
35'	4029	17.1					
40'	3629	17.2					
45'	2800	10.9					
50'	2445	11.9					
55'	2885	9.6					
60'	2586	5.4	2960	<10	<10	<10	<0.3

SB-7

Depth	Cl-	PID	Lab Cl-	GRO	DRO	EXT DRO	TOTAL BTEX
SS	115	0					
5'	333	16.8					
10'	699	7.1	832	<10	<10	<10	<0.3
15'	344	7.7	400	<10	<10	<10	<0.3

ROC OPERATING COMPANY
ROC
SINCE 1955

BD
C-28 EOL

1R426-219

UL C SECTION 28
T-22-S R-37-E
LEA COUNTY, NM

GPS: 32.369055 -103.169415
NAD83 STATE PLANE PROJECTION
NEW MEXICO EAST ZONE

0 10 20
Feet

GPS date: 6/1/18, 9/4/18
7/1/19 TG
Drawing date: 8/29/19
Drafted by: T. Grieco

N
W E
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Soil Bore Installation

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

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	8/28/2018
End Date:	8/28/2018

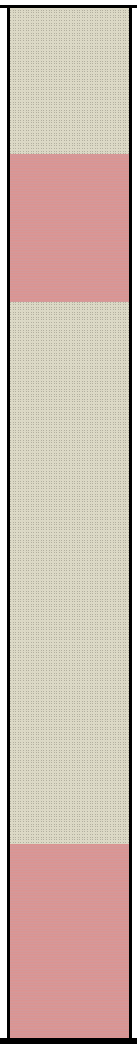
TASMAN GEOSCIENCES

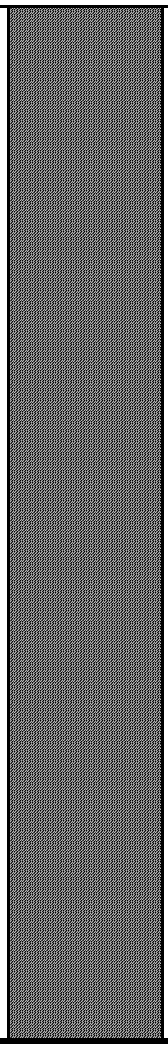
Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-1
Project Consultant: Tasman

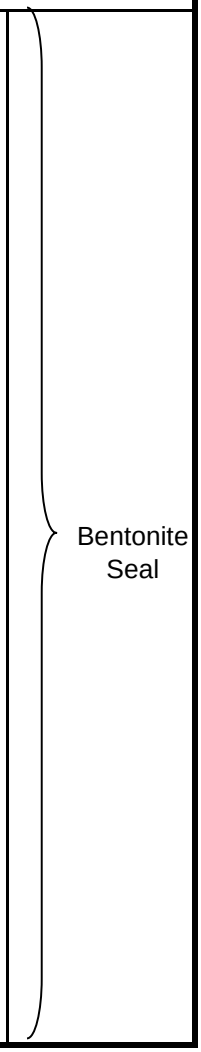
Comments: Soil samples were collected from drill cuttings at specified intervals. SB-1 was drilled approximately 20' East of the source area.
DRAFTED BY: Nick Kopiasz
TD = 25' GW = ~75'

Location: Unit C, Section 28, T22S, R37E
Lat: 32.369051 **County:** Lea
Long: -103.169352 (NAD83) **State:** NM

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	N/A		0.0	SW-light brown, well graded sand, caliche
5 ft	N/A		4.7	SM-light brown, very fine sand with clay
10 ft	N/A		3.8	SW-light tan, well graded sand, caliche
15 ft	857	Cl-=1,070	2.7	SW-Same as above (SAA)
		GRO=<10		
		DRO=<10		
		EXT DRO=<10		
		Total BTEX=<0.3		
20 ft	534		2.9	SW-SAA
25 ft	405	Cl-=368	3.0	SM-tan, very fine grained sand
		GRO=<10		
		DRO=<10		
		EXT DRO=<10		







Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	8/28/2018
End Date:	8/28/2018

TASMAN GEOSCIENCES

Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-2
Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. SB-2 was drilled approximately 10' North of the source area.
DRAFTED BY: Nick Kopiasz
TD = 70' GW = ~75'

Location: Unit C, Section 28, T22S, R37E
Lat: 32.369099 **County:** Lea
Long: -103.169391 (NAD83) **State:** NM

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	60		0.0	SW-light brown, well graded sand, caliche
5 ft	518		0.0	GW-light brown, well graded gravel, caliche
10 ft	679		0.4	SW-light brown, well graded sand, caliche
15 ft	695		0.5	SW-Same as above (SAA)
20 ft	859		0.4	SM-tan, very fine sand, caliche
25 ft	985		0.0	SM-SAA
30 ft	874		0.0	SM-tan, very fine sand
35 ft	874		0.1	SM-SAA
40 ft	1,016		0.2	SM-tan, very fine sand, occasional caliche

Lithology

Well Construction: Bentonite Seal

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description	Lithology	Well Construction
45 ft	900		0.0	SM-tan, very fine sand, trace caliche and sandstone		
50 ft	1,073		0.0	SM-tan, very fine sand		
55 ft	1,017		0.0	SM-tan, very fine sand, occasional caliche		
60 ft	1,291	Cl-=1,180	0.0	SM-tan, very fine sand		
		GRO=<10				
		DRO=<10				
	EXT DRO=<10					
65 ft	1,081		0.0	SM-SAA		
70 ft	885	Cl-=1,070	0.0	SM-SAA		
		GRO=<10				
		DRO=<10				
	EXT DRO=<10					
	Total BTEX=<0.3					

Bentonite Seal

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	8/28/2018
End Date:	8/28/2018

TASMAN GEOSCIENCES

Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-3
Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. SB-3 was drilled approximately 10' West of the source area.
DRAFTED BY: Nick Kopiasz
TD = 70' GW = ~75'

Location: Unit C, Section 28, T22S, R37E
Lat: 32.369069 **County:** Lea
Long: -103.169484 (NAD83) **State:** NM

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	57		0.0	SW-light brown, well graded sand, caliche
5 ft	347		0.0	SW-light brown, well graded sand, some clay, caliche
10 ft	1,124		0.0	SW-light tan, well graded sand, caliche
15 ft	1,247		0.0	SW-tan, well graded sand, caliche
20 ft	903		0.0	SW-Same as above (SAA)
25 ft	1,085		0.0	SW-light tan, well graded sand, caliche
30 ft	1,425		0.0	SM-light tan, very fine sand, trace caliche
35 ft	1,200		0.0	SM-tan, very fine sand
40 ft	1,404		0.0	SM-light tan, very fine sand

Lithology

Well Construction: Bentonite Seal

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description	Lithology	Well Construction
45 ft	1,702	Cl-=1,780	0.0	SM-SAA		Bentonite Seal
		GRO=<10				
		DRO=<10				
	EXT DRO=<10					
50 ft	1,587		0.0	SM-SAA		
55 ft	1,665		0.0	SM-SAA		
60 ft	1,228		0.0	SM-tan, very fine sand		
65 ft	1,140		0.0	SM-tan, very fine sand, trace sandstone		
70 ft	878	Cl-=608	0.0	SM-light tan, very fine sand trace caliche		
		GRO=<10				
		DRO=<10				
	EXT DRO=<10					
	Total BTEX=<0.3					

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	8/30/2018
End Date:	8/30/2018

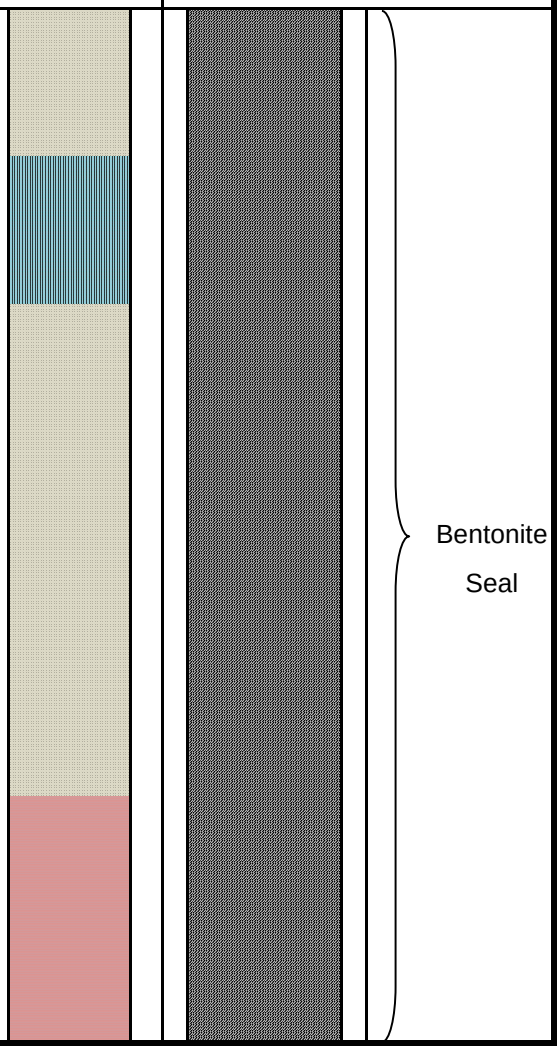
TASMAN GEOSCIENCES

Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-4
Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. SB-4 was drilled approximately 30' South of the source area.
DRAFTED BY: Nick Kopiasz
TD = 25' GW = ~75'

Location: Unit C, Section 28, T22S, R37E
Lat: 32.368934 **County:** Lea
Long: -103.169409 (NAD83) **State:** NM

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	58		0.0	SW-light brown, well graded sand, caliche
5 ft	206		0.0	GW-light brown, well graded gravel, caliche
10 ft	302		0.0	SW-light brown, well graded sand, caliche
15 ft	559	Cl-=832	0.0	SW-Same as above (SAA)
		GRO=<10		
		DRO=<10		
		EXT DRO=<10		
20 ft	376		0.0	SW-SAA
25 ft	278	Cl-=224	0.0	SM-light tan, very fine sand
		GRO=<10		
		DRO=<10		
		EXT DRO=<10		
		Total BTEX=<0.3		



Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	4/24/2019
End Date:	4/24/2019

TASMAN GEOSCIENCES

Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-5
Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. SB-5 was drilled approximately 15' North of SB-2.
DRAFTED BY: Nick Kopiasz
TD = 20' GW = ~75'

Location: Unit C, Section 28, T22S, R37E
Lat: 32.369158 **County:** Lea
Long: -103.169392 (NAD83) **State:** NM

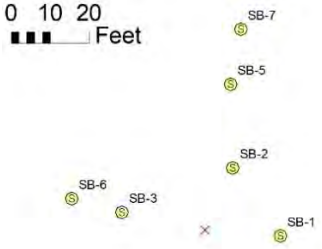
Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	89		0.0	SM-brown, silty sand, some caliche chunks
5 ft	633		0.0	SW-light brown, well graded sand, some caliche cobbles
10 ft	955		0.0	SW-reddish tan, well graded sand, caliche cobbles
15 ft	1,101	Cl-=1,300	0.0	SW-Same As Above (SAA)
		GRO=<10		
		DRO=<10		
		EXT DRO=<10		
		Total BTEX=<0.3		
20 ft	262	Cl-=256	0.0	GW-light tan, silty gravel, cobbles of sandstone with calcic cement
		GRO=<10		
		DRO=<10		
		EXT DRO=<10		
		Total BTEX=<0.3		

Lithology

Well Construction

Bentonite Seal

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	6/24/2019
End Date:	6/24/2019



TASMAN GEOSCIENCES

Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-6
Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. SB-6 was drilled approximately 15' West of SB-3.
DRAFTED BY: Nick Kopiasz
TD = 60' GW = ~75'

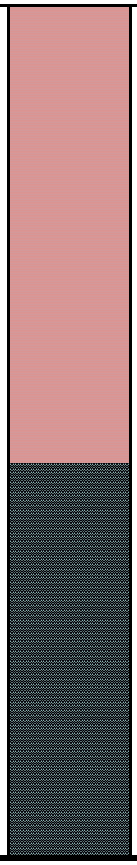
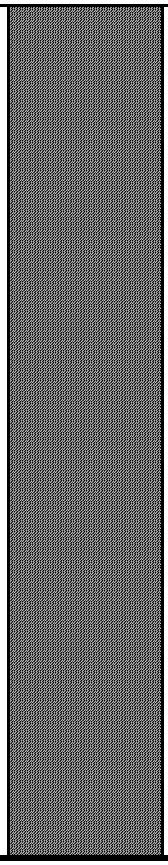
Location: Unit C, Section 28, T22S, R37E
Lat: 32.369079 **County:** Lea
Long: -103.169525 (NAD83) **State:** NM

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	94		0	SW-light brown, well graded, coarse to very fine sand
5 ft	1,524	Cl-=1,890	284.1	SC-reddish tan, clay w/ very fine sand
		GRO=<10		
		DRO=<10		
	EXT DRO=<10			
	Total BTEX=<0.3			
10 ft	6,128	Cl-=7,040	132.1	SM-reddish tan, sandy silt, pebbles of caliche
		GRO=<10		
		DRO=<10		
	EXT DRO=<10			
	Total BTEX=<0.3			
15 ft	4,559		22.1	SW-tan, well graded, silt with mechanically weathered sandstone
20 ft	4,559		38.6	SM-reddish tan, silty sand
25 ft	4,486		22.7	SM- Same As Above (SAA)
30 ft	3,157		15.1	SM-SAA
35 ft	4,029		17.1	SM-tan, silty sand

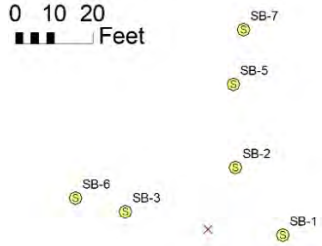
Lithology

Well Construction

Bentonite Seal

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description	Lithology	Well Construction
40 ft	3,629		17.2	SM-SAA		 Bentonite Seal
45 ft	2,800		10.9	SM-reddish tan, silty sand		
50 ft	2,445		11.9	SM-SAA		
55 ft	2,885		9.6	GM-reddish tan, gravelly silt, weathered sandstone pebbles		
60 ft	2,586	Cl-=2,960	5.4	GM-SAA		
		GRO=<10				
		DRO=<10				
	EXT DRO=<10					
	Total BTEX=<0.3					

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	6/24/2019
End Date:	6/24/2019



TASMAN GEOSCIENCES

Company: Rice Operating Company
Project Name: BD C-28 EOL
Well ID: SB-7
Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. SB-7 was drilled approximately 15' North of SB-5.
DRAFTED BY: Nick Kopiasz
TD = 15' GW = ~75'

Location: Unit C, Section 28, T22S, R37E
Lat: 32.369197 **County:** Lea
Long: -103.169383 (NAD83) **State:** NM

Depth (feet)	Chloride field tests	LAB (mg/kg)	PID (ppm)	Description
SS	115		0.0	SW-light brown, well graded, coarse to very fine sand
5 ft	333		16.8	GW-light brown, well graded, gravels and sands, mechanically weathered caliche pebbles
10 ft	699	Cl-=832	7.1	SM-reddish tan, silty sand
		GRO=<10		
		DRO=<10		
	EXT DRO=<10			
	Total BTEX=<0.3			
15 ft	344	Cl-=400	7.7	SM-light tan, silty sand
		GRO=<10		
		DRO=<10		
	EXT DRO=<10			
	Total BTEX=<0.3			

Lithology

Well Construction

Bentonite Seal

CARDINAL Laboratories

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

September 12, 2018

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD C-28 EOL

Enclosed are the results of analyses for samples received by the laboratory on 08/31/18 16:30.

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.

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:	08/31/2018	Sampling Date:	08/28/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 1 @ 15' (H802485-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/05/2018	ND	2.11	106	2.00	0.309	
Toluene*	<0.050	0.050	09/05/2018	ND	2.07	104	2.00	0.461	
Ethylbenzene*	<0.050	0.050	09/05/2018	ND	2.04	102	2.00	0.412	
Total Xylenes*	<0.150	0.150	09/05/2018	ND	5.84	97.4	6.00	0.0760	
Total BTEX	<0.300	0.300	09/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.9 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1070**	16.0	09/05/2018	ND	416	104	400	0.00	QM-07

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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane *98.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *91.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:	08/31/2018	Sampling Date:	08/28/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 1 @ 25' (H802485-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**368**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane	*104 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*95.4 %*	*37.6-147*

Sample ID: SOIL BORE 2 @ 60' (H802485-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1180**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane	*95.4 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*87.9 %*	*37.6-147*

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

Received:	08/31/2018	Sampling Date:	08/28/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 2 @ 70' (H802485-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/05/2018	ND	2.11	106	2.00	0.309	
Toluene*	<0.050	0.050	09/05/2018	ND	2.07	104	2.00	0.461	
Ethylbenzene*	<0.050	0.050	09/05/2018	ND	2.04	102	2.00	0.412	
Total Xylenes*	<0.150	0.150	09/05/2018	ND	5.84	97.4	6.00	0.0760	
Total BTEX	<0.300	0.300	09/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.7 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1070**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane *97.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.5 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:	08/31/2018	Sampling Date:	08/28/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 3 @ 45' (H802485-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1780**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane	*107 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*98.0 %*	*37.6-147*

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

Received:	08/31/2018	Sampling Date:	08/28/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 3 @ 70' (H802485-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/05/2018	ND	2.11	106	2.00	0.309	
Toluene*	<0.050	0.050	09/05/2018	ND	2.07	104	2.00	0.461	
Ethylbenzene*	<0.050	0.050	09/05/2018	ND	2.04	102	2.00	0.412	
Total Xylenes*	<0.150	0.150	09/05/2018	ND	5.84	97.4	6.00	0.0760	
Total BTEX	<0.300	0.300	09/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.7 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane *103 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.0 %* *37.6-147*

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

Received:	08/31/2018	Sampling Date:	08/30/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 4 @ 15' (H802485-07)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**832**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane	*92.7 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*84.1 %*	*37.6-147*

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

Received:	08/31/2018	Sampling Date:	08/30/2018
Reported:	09/12/2018	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: SOIL BORE 4 @ 25' (H802485-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/05/2018	ND	2.11	106	2.00	0.309	
Toluene*	<0.050	0.050	09/05/2018	ND	2.07	104	2.00	0.461	
Ethylbenzene*	<0.050	0.050	09/05/2018	ND	2.04	102	2.00	0.412	
Total Xylenes*	<0.150	0.150	09/05/2018	ND	5.84	97.4	6.00	0.0760	
Total BTEX	<0.300	0.300	09/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *69.8-142*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	09/05/2018	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	09/04/2018	ND	194	96.9	200	0.137	
DRO >C10-C28*	<10.0	10.0	09/04/2018	ND	188	94.2	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	09/04/2018	ND					

Surrogate: 1-Chlorooctane *92.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *85.2 %* *37.6-147*

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

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Rice Operating	**BILL TO**	
Project Manager:	Katie Jones / Kyle Norman	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:	BD C-28 EOL	Phone #:	
Sampler Name:	Kyle Norman	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
H802485																				
1	Soil Bore 1 @ 15'		1			✓					✓		8/28/18	0830	✓	✓	✓			
2	Soil Bore 1 @ 25'		1			✓					✓		↓	0850	✓	✓				
3	Soil Bore 2 @ 60'		1			✓					✓			0915	✓	✓				
4	Soil Bore 2 @ 70'		1			✓					✓			0920	✓	✓	✓			
5	Soil Bore 3 @ 45'		1			✓					✓			1145	✓	✓				
6	Soil Bore 3 @ 70'		1			✓					✓		↓	1215	✓	✓	✓			
7	Soil Bore 4 @ 15'		1			✓					✓		8/30/18	0900	✓	✓				
8	Soil Bore 4 @ 25'		1			✓					✓		↓	1145	✓	✓	✓			

Relinquished By:	Date: 8/31/18 Time: 1600	Received By:	
Relinquished By:	Date: 8/31/18 Time: 1630	Received By:	Jodi Henson
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	4.3°C / #97	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:
kjones@riceswd.com knorman@tasman-geo.com
tgrieco@basinenv.com

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

CARDINAL Laboratories

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

April 30, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD C-28 EOL

Enclosed are the results of analyses for samples received by the laboratory on 04/26/19 16:40.

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.

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:	04/26/2019	Sampling Date:	04/24/2019
Reported:	04/30/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 5 @ 15' (H901509-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/29/2019	ND	1.84	92.2	2.00	0.724	
Toluene*	<0.050	0.050	04/29/2019	ND	1.97	98.4	2.00	2.01	
Ethylbenzene*	<0.050	0.050	04/29/2019	ND	1.89	94.6	2.00	2.12	
Total Xylenes*	<0.150	0.150	04/29/2019	ND	5.92	98.6	6.00	1.57	
Total BTEX	<0.300	0.300	04/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.7 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1300**	16.0	04/30/2019	ND	400	100	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	04/29/2019	ND	215	108	200	0.819	
DRO >C10-C28*	<10.0	10.0	04/29/2019	ND	208	104	200	0.102	
EXT DRO >C28-C36	<10.0	10.0	04/29/2019	ND					

Surrogate: 1-Chlorooctane *79.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *74.3 %* *37.6-147*

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

Received:	04/26/2019	Sampling Date:	04/24/2019
Reported:	04/30/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 5 @ 20' (H901509-02)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/29/2019	ND	1.84	92.2	2.00	0.724	
Toluene*	<0.050	0.050	04/29/2019	ND	1.97	98.4	2.00	2.01	
Ethylbenzene*	<0.050	0.050	04/29/2019	ND	1.89	94.6	2.00	2.12	
Total Xylenes*	<0.150	0.150	04/29/2019	ND	5.92	98.6	6.00	1.57	
Total BTEX	<0.300	0.300	04/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.5 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**256**	16.0	04/30/2019	ND	400	100	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	04/29/2019	ND	215	108	200	0.819	
DRO >C10-C28*	<10.0	10.0	04/29/2019	ND	208	104	200	0.102	
EXT DRO >C28-C36	<10.0	10.0	04/29/2019	ND					

Surrogate: 1-Chlorooctane *83.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *78.2 %* *37.6-147*

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.
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

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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 / Kyle Norman	**P.O. #:**
Address: 211 W. Turner	**Company:**
City: Hobbs **State:** NM **Zip:** 88240	**Attn:**
Phone #: **Fax #:**	**Address:**
Project #: **Project Owner:**	**City:**
Project Name:	**State:** **Zip:**
Project Location: BD C-28 EOL	**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						
H901509																										
1	SB5@15'		1			✓					✓		4/24/19		✓	✓	✓									
2	SB5@20'		1			✓					✓		4/24/19		✓	✓	✓									
																	✓									

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 consequental 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:	**Date:** 4-26-19	**Received By:** Tamara Oldaker	
	Time: 16:40		
Relinquished By:	**Date:**	**Received By:**	
	Time:		

Phone Result: ☐ Yes ☑ No	**Add'l Phone #:**	
Fax Result: ☐ Yes ☑ No	**Add'l Fax #:**	
REMARKS: email results: kjones@riceswd.com knorman@tasman-geo.com tgrieco@basinenv.com nkopiasz@tasman-geo.com		

Delivered By: (Circle One)	**Sample Condition**	**CHECKED BY:**
Sampler - UPS - Bus - Other: 10.1c #97	Cool: ☐ Yes ☐ No — Intact: ☑ Yes ☐ No	(Initials) TO

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

CARDINAL Laboratories

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

July 01, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD C-28 EOL

Enclosed are the results of analyses for samples received by the laboratory on 06/26/19 16:26.

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.

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:	06/26/2019	Sampling Date:	06/24/2019
Reported:	07/01/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 6 @ 5' (H902192-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1890**	16.0	06/27/2019	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	06/28/2019	ND	214	107	200	1.29	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	228	114	200	0.919	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane *81.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *84.5 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:	06/26/2019	Sampling Date:	06/24/2019
Reported:	07/01/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 6 @ 10' (H902192-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**7040**	16.0	06/27/2019	ND	416	104	400	0.00	QM-07

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	06/28/2019	ND	214	107	200	1.29	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	228	114	200	0.919	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane *79.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *81.9 %* *37.6-147*

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

Received:	06/26/2019	Sampling Date:	06/24/2019
Reported:	07/01/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 6 @ 60' (H902192-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2960**	16.0	06/27/2019	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	06/28/2019	ND	214	107	200	1.29	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	228	114	200	0.919	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane *88.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *92.9 %* *37.6-147*

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

Received:	06/26/2019	Sampling Date:	06/24/2019
Reported:	07/01/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 7 @ 10' (H902192-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**832**	16.0	06/27/2019	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	07/01/2019	ND	214	107	200	1.29	
DRO >C10-C28*	<10.0	10.0	07/01/2019	ND	228	114	200	0.919	
EXT DRO >C28-C36	<10.0	10.0	07/01/2019	ND					

Surrogate: 1-Chlorooctane *75.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *81.5 %* *37.6-147*

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

Received:	06/26/2019	Sampling Date:	06/24/2019
Reported:	07/01/2019	Sampling Type:	Soil
Project Name:	BD C-28 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SB 7 @ 15' (H902192-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**400**	16.0	06/27/2019	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	06/28/2019	ND	214	107	200	1.29	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	228	114	200	0.919	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane *74.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *76.8 %* *37.6-147*

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

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Rice Operating
Project Manager: Katie Jones / Kyle Norman
Address:
City: State: Zip:
Phone #: Fax #:
Project #: Project Owner:
Project Name: BD C-28 EOL
Project Location:
Sampler Name: N.Kopiasz

BILL TO
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

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 Ext	BTEX	Texas TPH	Complete Cations/Anions	TDS
H902192																				
1	SB-6 @ 5'	G	1			✓					✓		6/24/19	09:00	✓	✓	✓			
2	SB-6 @ 10'		1			✓					✓		6/24/19	09:05	✓	✓	✓			
3	SB-6 @ 60'		1			✓					✓		6/24/19	09:30	✓	✓	✓			
4	SB-7 @ 10'		1			✓					✓		6/24/19	10:00	✓	✓	✓			
5	SB-7 @ 15'	G	1			✓					✓		6/24/19	10:05	✓	✓	✓			

Relinquished By: Date: 6/26/19 Time: 1626 Received By: Tamara Oldaker
Relinquished By: Date: Time: Received By:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: -0.9 c H97
Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials) TO.

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

email results:
kjones@riceswd.com; knorman@tasman-geo.com;
tgrieco@basinenv.com; nkopiasz@tasman-geo.com

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

BD C-28 EOL (1R426-219)
Unit C, Section 28, T22S, R37E

SB-1

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	n/a	0.0			
5	n/a	4.7			
10	n/a	3.8			
15	857	2.7	1,070	<10, <10, <10	<0.3
20	534	2.9			
25	405	3.0	368	<10, <10, <10	

SB-2

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	60	0.0			
5	518	0.0			
10	679	0.4			
15	695	0.5			
20	859	0.4			
25	985	0.0			
30	874	0.0			
35	874	0.1			
40	1,016	0.2			
45	900	0.0			
50	1,073	0.0			
55	1,017	0.0			
60	1,291	0.0	1,180	<10, <10, <10	
65	1,081	0.0			
70	885	0.0	1,070	<10, <10, <10	<0.3

SB-3

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	57	0.0			
5	347	0.0			
10	1,124	0.0			
15	1,247	0.0			
20	903	0.0			
25	1,085	0.0			
30	1,425	0.0			
35	1,200	0.0			
40	1,404	0.0			
45	1,702	0.0	1,780	<10, <10, <10	
50	1,587	0.0			
55	1,665	0.0			
60	1,228	0.0			
65	1,140	0.0			
70	878	0.0	608	<10, <10, <10	<0.3

SB-4

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	58	0.0			
5	206	0.0			
10	302	0.0			
15	559	0.0	832	<10, <10, <10	<0.3
20	376	0.0			
25	278	0.0	224	<10, <10, <10	<0.3

SB-5

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	89	0.0			
5	633	0.0			
10	955	0.0			
15	1,101	0.0	1,300	<10, <10, <10	<0.3
20	262	0.0	256	<10, <10, <10	<0.3

SB-6

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	94	0.0			
5	1,524	284.1	1890	<10, <10, <10	<0.3
10	6,128	132.1	7040	<10, <10, <10	<0.3
15	4,559	22.1			
20	4,559	38.6			
25	4,486	22.7			
30	3,157	15.1			
35	4,029	17.1			
40	3,629	17.2			
45	2,800	10.9			
50	2,445	11.9			
55	2,885	9.6			
60	2,586	5.4	2960	<10, <10, <10	<0.3

SB-7

	Field		Lab		
Depth	Cl-	PID	Cl	GRO, DRO, EXT	BTEX
SS	115	0.0			
5	333	16.8			
10	699	7.1	832	<10, <10, <10	<0.3
15	344	7.7	400	<10, <10, <10	<0.3

Multimed

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

MULTIMED V1.01 DATE OF CALCULATIONS: 4-SEP-2019 TIME: 23:14:47

U. S. E N V I R O N M E N T A L P R O T E C T I O N A G E N C Y

E X P O S U R E A S S E S S M E N T

M U L T I M E D I A M O D E L

MULTIMED (Version 1.50, 2005)

1
Run options
--- -------

Rice BD C-28 EOL - boring

1R426-219
Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models
Run was DETERMIN
Infiltration Specified By User: 1.524E-02 m/yr
Run was transient
Well Times: Find Maximium Concentration
Reject runs if Y coordinate outside plume
Reject runs if Z coordinate outside plume
Gaussian source used in saturated zone model
1
1
UNSATURATED ZONE FLOW MODEL PARAMETERS
(input parameter description and value)

NP	- Total number of nodal points	240
NMAT	- Number of different porous materials	1
KPROP	- Van Genuchten or Brooks and Corey	1
IMSHGN	- Spatial discretization option	1
NVFLAYR	- Number of layers in flow model	1

OPTIONS CHOSEN
------- ------
Van Genuchten functional coefficients
User defined coordinate system
1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
---------	---------------	-----------------

BD C-28 EOL (1R426-219) boring ejh

1 1.50 1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	STD DEV	LIMITS MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	1.50	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	STD DEV	LIMITS MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent,EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used		1
NTSTPS	- Number of time values concentration calc		40
DUMMY	- Not presently used		1
ISOL	- Type of scheme used in unsaturated zone		2
N	- Stehfest terms or number of increments		18
NTEL	- Points in Lagrangian interpolation		3
NGPTS	- Number of Gauss points		104
NIT	- Convolution integral segments		2
IBOUND	- Type of boundary condition		3
ITSGEN	- Time values generated or input		1
TMAX	- Max simulation time	--	0.0
WTFUN	- Weighting factor	--	1.2

OPTIONS CHOSEN

Convolution integral approach

Exponentially decaying continuous source
Computer generated times for computing concentrations
1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	1.50	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

1

CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	l/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	l/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry`s law constant	atm-m^3/M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

1

SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	LIMITS

BD C-28 EOL (1R426-219) boring ejh

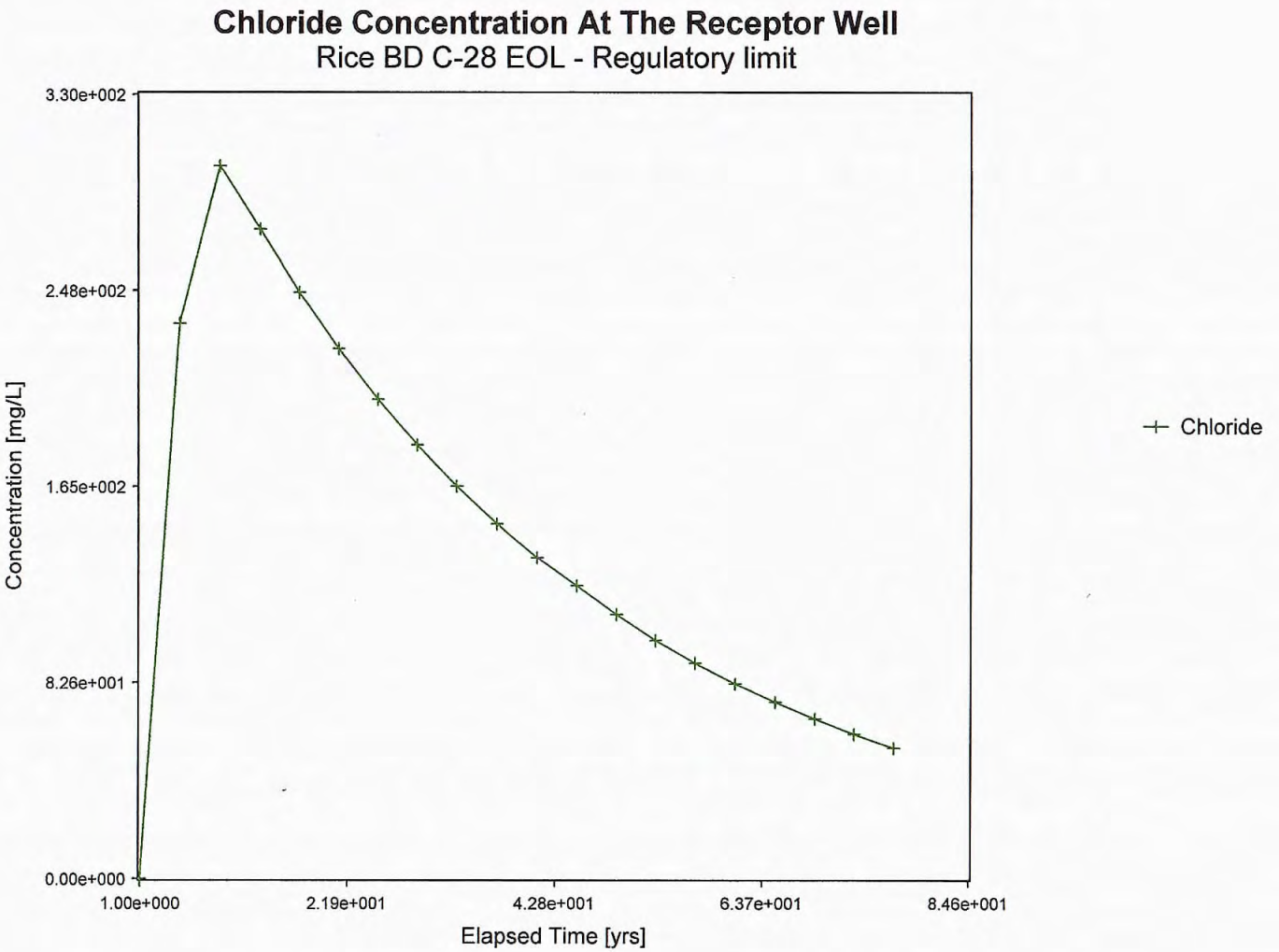
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.152E-01	-999.	-999.	-999.
Area of waste disposal unit	m^2	CONSTANT	748.	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.107E+04	-999.	-999.	-999.
Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

1

AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	PARAMETERS STD DEV	LIMITS MIN	LIMITS MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

MAXIMUM WELL CONCENTRATION IS 239.4 AT 0.346E+02 YEARS



U. S. E N V I R O N M E N T A L P R O T E C T I O N A G E N C Y

E X P O S U R E A S S E S S M E N T

M U L T I M E D I A M O D E L

MULTIMED (Version 1.50, 2005)

1
Run options
--- -------

Rice BD C-28 EOL - Regulatory limit

1R426-219
Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models
Run was DETERMIN
Infiltration Specified By User: 3.050E-02 m/yr
Run was transient
Well Times: Find Maximium Concentration
Reject runs if Y coordinate outside plume
Reject runs if Z coordinate outside plume
Gaussian source used in saturated zone model
1
1
UNSATURATED ZONE FLOW MODEL PARAMETERS
(input parameter description and value)

NP	- Total number of nodal points	240
NMAT	- Number of different porous materials	1
KPROP	- Van Genuchten or Brooks and Corey	1
IMSHGN	- Spatial discretization option	1
NVFLAYR	- Number of layers in flow model	1

OPTIONS CHOSEN
------- ------
Van Genuchten functional coefficients
User defined coordinate system
1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
---------	---------------	-----------------

1 0.50 1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	STD DEV	LIMITS MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	0.500	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	STD DEV	LIMITS MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent,EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used		1
NTSTPS	- Number of time values concentration calc		40
DUMMY	- Not presently used		1
ISOL	- Type of scheme used in unsaturated zone		2
N	- Stehfest terms or number of increments		18
NTEL	- Points in Lagrangian interpolation		3
NGPTS	- Number of Gauss points		104
NIT	- Convolution integral segments		2
IBOUND	- Type of boundary condition		3
ITSGEN	- Time values generated or input		1
TMAX	- Max simulation time	--	0.0
WTFUN	- Weighting factor	--	1.2

OPTIONS CHOSEN

Convolution integral approach

Exponentially decaying continuous source
Computer generated times for computing concentrations
1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	0.500	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

1

CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	l/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	l/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry`s law constant	atm-m^3/M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

1

SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	LIMITS

BD C-28 EOL (1R426-219) regulatory ejh

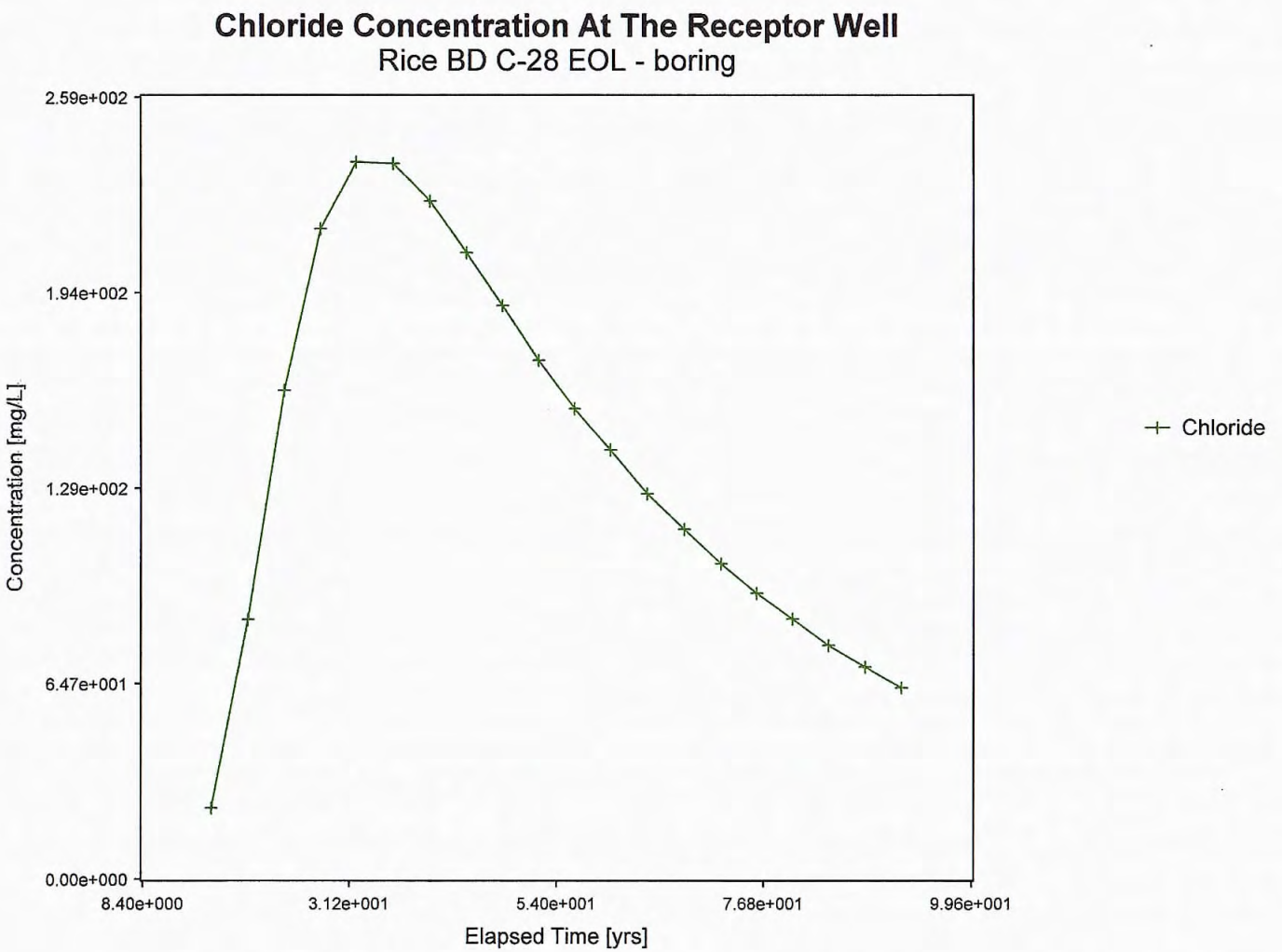
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.	-999.	-999.
Area of waste disposal unit	m^2	CONSTANT	748.	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	600.	-999.	-999.	-999.
Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

1

AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS MEAN	PARAMETERS STD DEV	LIMITS MIN	LIMITS MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

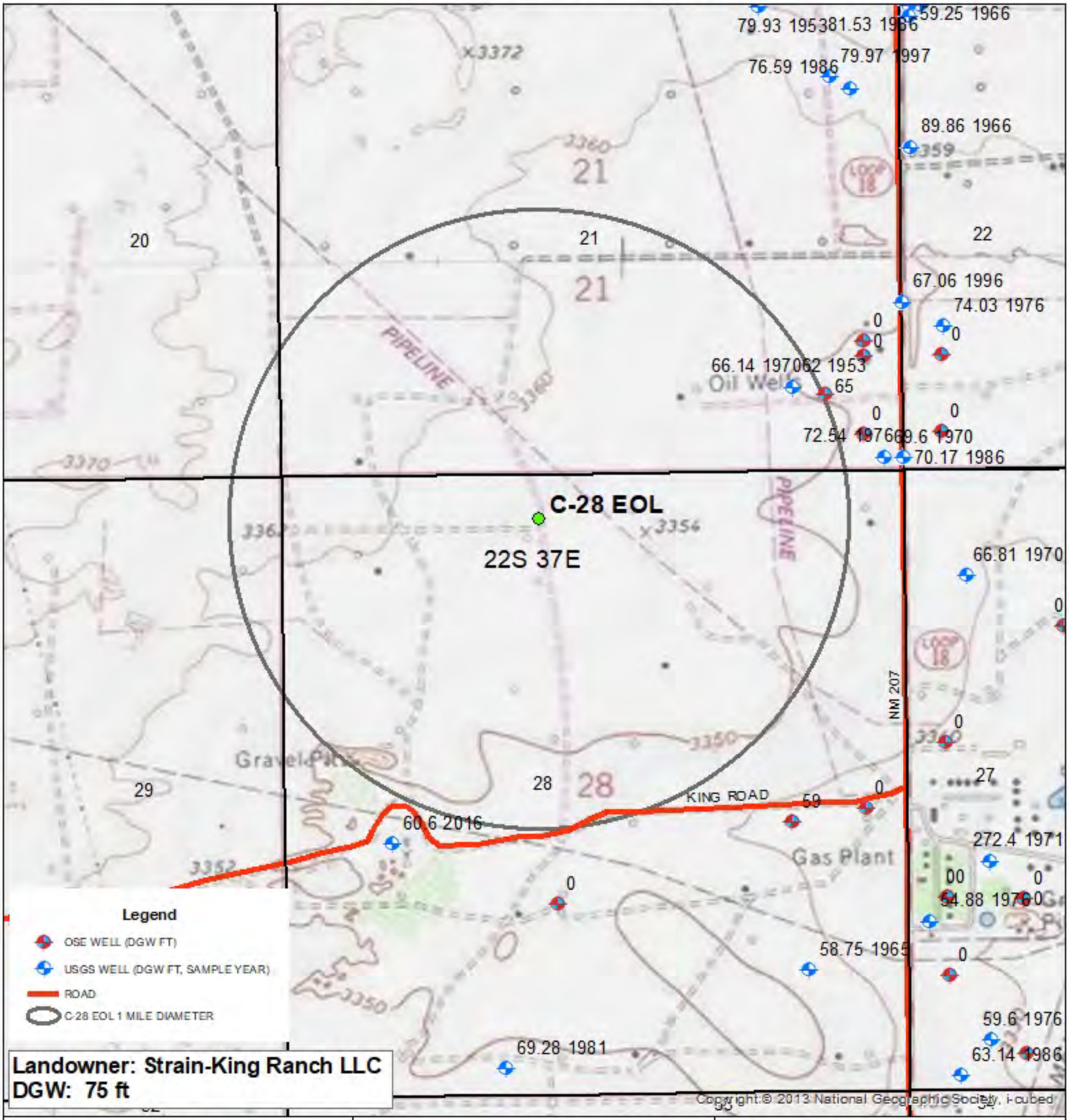
MAXIMUM WELL CONCENTRATION IS 303.5 AT 0.953E+01 YEARS



Depth to Groundwater

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

Depth to Groundwater



RICE OPERATING COMPANY
ROC
SINCE 1955

BD
C-28 EOL

1R426-219

UL C SECTION 28
T-22-S R-37-E
LEA COUNTY, NM

GPS: 32.369055 -103.169415
NAD 83 STATE PLANE PROJECTION
NM EAST ZONE

0 500 1,000
Feet

Drawing date: 1/22/20
Drafted by: T. Grieco

N
W E
S

C-141 and Current Photos

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

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1R426-219
Facility ID	
Application ID	pEJH0936250359

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	75 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1R426-219
Facility ID	
Application ID	pEJH0936250359

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.

Printed Name: Katie Jones Davis Title: Env. Manager

Signature: Katie Jones Davis Date: 1/21/2020

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

OCD Only

Received by: _____ Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1R426-219
Facility ID	
Application ID	pEJH0936250359

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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.

Printed Name: Katie Jones Davis Title: Env. Manager

Signature: Katie Jones Davis Date: 1/21/2020

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☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Jennifer Nobui Date: 05/03/2022

BD C-28 EOL (1R426-219)
Unit Letter C, Section 28, T22S, R37E

Facing South **6/1/2018**

Facing East **6/1/2018**

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

Operator:	OGRID:
RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	19174
	Action Number: 72833
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Remediation Plan and Variance Approved with Conditions. Please collect one sample per 50 cubic yards for excavated soil to be evaluated for use as backfill. Chloride concentrations much be below 600 mg/kg. No Blending Allowed.	5/3/2022