# ANNUAL MONITORING REPORT

YEAR(S):

AP



CERTIFIED MAIL RECEIPT NO. 7010 2250 0001 4928 0117

RECEIVED OCD OIL MARILY A March 11, 2011

> Mr. Edward Hansen New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87504



## RE: 2010 ANNUAL GROUNDWATER MONITORING REPORT BD JCT. J-26 SITE (AP-75) T21S, R37E, SECTION 26, UNIT LETTER J LEA COUNTY, NEW MEXICO

Mr. Hansen:

As agent for Rice Operating Company (ROC), Trident Environmental submits this 2010 Annual Groundwater Monitoring Report for the BD Jct. J-26 site (AP-75) located in the Blinebry-Drinkard (BD) Salt Water Disposal (SWD) System.

Recovery well RW-1 was installed on May 14, 2010. Groundwater recovery activities were initiated at monitoring well MW-2 on October 10, 2010. As of November 26, 2010, approximately 125 bbls of groundwater has been removed when the system was shut down for the winter season to avoid any breakdowns from freezing conditions.

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

Thank you for your consideration concerning this annual summary of groundwater monitoring information. If you have any questions, please contact Hack Conder at (575) 393-9174.

Sincerely,

Gilbert J. Van Deventer, REM, PG

cc: Hack Conder (Rice Operating Co., Hobbs, NM)



MAR 1 4 2011

Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87505

enclosures: map, tables, graphs, laboratory analytical reports, and chain of custody documentation



. . .

# BD Jct. J-26 Site (AP-75) 2010 Annual Groundwater Monitoring Report

,

Monitoring	Sample	Depth to	Groundwater	Chloride	TDS	Benzene	Toluene	Ethylbenzene	Xvlene
Well	Date	Groundwater	Elevation	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
		(feet BTOC)	(feet AMSL)	(	(8)	(	(	(	(9 =)
	10/29/02	43.02	3332.82	4520	9020	< 0.001	< 0.001	< 0.001	< 0.001
	02/28/03	42.33	3333.51	3470	6870	< 0.001	< 0.001	< 0.001	< 0.001
	06/05/03	42.52	3333.32	1460	3280	< 0.001	< 0.001	< 0.001	< 0.001
	08/22/03	43.72	3332.12	957	2620	< 0.001	< 0.001	< 0.001	< 0.001
ļ	10/30/03	43.91	3331.93	620	2040	< 0.001	< 0.001	< 0.001	< 0.001
	02/18/04	43.70	3332.14	478	1630	< 0.001	< 0.001	< 0.001	< 0.001
	05/05/04	40.80	3335.04	390	1440	< 0.001	< 0.001	< 0.001	< 0.001
	08/10/04	37.02	3338.82	195	1080	< 0.001	< 0.001	< 0.001	< 0.001
	11/09/04	36.61	3339.23	177	1100	< 0.001	< 0.001	< 0.001	< 0.001
	02/09/05	36.62	3339.22	179	1090	< 0.001	< 0.001	< 0.001	< 0.001
	05/05/05	37.00	3338.84	179	1060	< 0.001	< 0.001	< 0.001	< 0.001
	08/13/05	37.56	3338.28	193	1000	< 0.001	< 0.001	< 0.001	< 0.001
	11/07/05	37.98	3337.86	233	1020	< 0.001	< 0.001	< 0.001	< 0.001
	02/06/06	38.39	3337.45	262	1080	< 0.001	< 0.001	< 0.001	< 0.001
	05/08/06	38.55	3337.29	282	1140	< 0.001	< 0.001	< 0.001	< 0.001
	08/01/06	38.80	3337.04	218	1176	< 0.001	< 0.001	< 0.001	< 0.001
MW-1	10/23/06	39.21	3336.63	193	1010				< 0.001
	02/08/07	39.52	3336.32	182	912				
	04/18/07	39.66	3336.18	161	808				
	07/18/07	30.86	3335.08	1/0	000				
	10/10/07	40.07	3335.98	160	015				
	01/14/09	40.07	2225 40	150	915				
	01/14/00	40.33	3333.49	132	904				
	04/04/08	40.41	3335.43	140	890				
	07/15/08	40.44	3335.40	132	907				
	10/08/08	40.76	3335.08	128	952				
	01/16/09	41.01	3334.83	136	890				
	04/13/09	40.94	3334.90	140	899				
	07/14/09	41.07	3334.77	144	893				
	10/13/09	41.02	3334.82	148	911		'		
	01/14/10	41.01	3334.83	144	891				
	04/12/10	41.17	3334.67	156	922				
	07/16/10	41.22	3334.62	164	939				
	10/12/10	41.22	3334.62	164	922				
	08/22/03	43.99	3331.33	239	1180	< 0.001	< 0.001	< 0.001	< 0.001
	10/30/03	44.17	3331.15	239	1240	< 0.001	< 0.001	< 0.001	< 0.001
	02/18/04	43.91	3331.41	221	1150	< 0.001	0.001	< 0.001	< 0.001
	05/05/04	40.98	3334.34	204	1060	< 0.001	0.001	< 0.001	< 0.001
	08/10/04	37.14	3338.18	230	1120	< 0.001	< 0.001	< 0.001	< 0.001
	11/09/04	36.99	3338.33	230	1120	< 0.001	< 0.001	< 0.001	< 0.001
	02/09/05	37.03	3338.29	294	1220	< 0.001	< 0.001	< 0.001	< 0.001
	05/06/05	37.46	3337.86	257	1210	< 0.001	< 0.001	< 0.001	< 0.001
MW-2	08/13/05	38.02	3337.30	237	1180	< 0.001	< 0.001	< 0.001	< 0.001
	11/07/05	38.44	3336.88	206	1130	< 0.001	< 0.001	< 0.001	< 0.001
	02/06/06	38.83	3336.49	250	1090	< 0.001	< 0.001	< 0.001	< 0.001
	05/08/06	39.02	3336.30	332	1500	< 0.001	< 0.001	< 0.001	< 0.001
	08/01/06	39.35	· 3335.97	387	1358	< 0.001	< 0.001	< 0.001	< 0.001
	10/23/06	39.71	3335.61	395	1370				
	02/08/07	40.03	3335.29	378	1220				
1	04/18/07	40.09	3335.23	446	1380				
	07/18/07	40.30	3335.02	679	1720				

.

•

# BD Jct. J-26 Site (AP-75) 2010 Annual Groundwater Monitoring Report

Historical Groundwater Sampling Results

.

a.,

÷

..

Monitoring Well	Sample Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)	Chloride (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
	10/10/07	40.52	3334.80	730	1838				
	01/14/08	40.74	3334.58	810	2061				
	04/04/08	40.80	3334.52	860	2470				
	07/15/08	40.84	3334.48	600	2270				
	10/08/08	41.20	3334.12	730	2470				
	01/16/09	41.39	3333.93	710	1960				
MW-2	04/13/09	41.30	3334.02	670	1890				
	07/14/09	41.42	3333.90	690	2030				
	10/13/09	41.31	3334.01	720	2010				
	01/14/10	41.33	3333.99	740	2000				
	04/12/10	41.49	3333.83	760	2000				
	07/16/10	41.52	3333.80	1000	2220				
	10/12/10			1060	2910				
	08/22/03	43.06	3332.79	160	904	< 0.001	< 0.001	< 0.001	< 0.001
	10/30/03	43.28	3332.57	168	1070	< 0.001	< 0.001	< 0.001	< 0.001
	02/18/04	43.03	3332.82	160	862	< 0.001	< 0.001	< 0.001	< 0.001
	05/05/04	40.04	3335.81	160	891	< 0.001	< 0.001	< 0.001	< 0.001
	08/10/04	36.55	3339.30	164	941	< 0.001	< 0.001	< 0.001	< 0.001
	11/09/04	36.22	3339.63	142	1160	< 0.001	< 0.001	< 0.001	< 0.001
	02/09/05	36.17	3339.68	138	1010	< 0.001	< 0.001	< 0.001	< 0.001
	05/06/05	36.56	3339.29	141	870	< 0.001	< 0.001	< 0.001	< 0.001
	08/13/05	37.12	3338.73	125	842	< 0.001	< 0.001	< 0.001	< 0.001
	11/07/05	37.55	3338.30	125	826	< 0.001	< 0.001	< 0.001	< 0.001
	02/06/06	37.84	3338.01	119	748	< 0.001	< 0.001	< 0.001	< 0.001
	05/08/06	38.00	3337.85	142	806	< 0.001	< 0.001	< 0.001	< 0.001
	08/01/06	38.22	3337.63	141	876	< 0.001	< 0.001	< 0.001	< 0.001
	10/23/06	38.68	3337.17	147	834				
MW_3	02/08/07	39.01	3336.84	147	788				
141 44 -5	04/18/07	39.16	3336.69	150	818				
	07/18/07	39.40	3336.45	139	848				
	10/10/07	39.60	3336.25	164	857				
	01/14/08	39.90	3335.95	160	886				
	04/04/08	39.95	3335.90	152	911				
	07/15/08	39.99	3335.86	120	840				
	10/08/08	40.27	3335.58	148	929				
	01/16/09	40.54	3335.31	148	853				
	04/13/09	40.50	3335.35	148	844				
	07/14/09	40.63	3335.22	144	831				
	10/13/09	40.61	3335.24	144	835				
	01/14/10	40.60	3335.25	144	865				
	04/12/10	40.65	3335.20	148	776				
	07/16/10	40.64	3335.21	156	811				
	10/12/10	40.68	3335.17	152	881				
RW-1	07/16/10	40.83	3333.93	152	840 824				
(Shallow)	10/12/10	40.80	3333.90	132	834 972				
	05/24/10	40.79	2222.02	144	825				
RW-1	05/24/10	40.83	3333.06	152	820				
(Deep)	10/12/10	40.00	3333.07	132	858				
	10/12/10	10.72	15,225	1-7-7	0.0				



5000 4000 Chloride Concentrations (mg/L) 3000 -MW-3 2000 ← RW-1 1000 00 0 Jan-06 Oct-07 Jul-08 Oct-08 Apr-09 Oct-09 Oct-04 Jul-04 Apr-04 Jul-05 Oct-05 Apr-06 Jul-06 Oct-06 Apr-07 Jul-07 Jan-08 Apr-08 Jan-09 Jul-09 Jan-10 Apr-10 Oct-10 Oct-02 Jan-03 Apr-03 Oct-03 Jan-04 Jan-05 Apr-05 Jan-07 Jul-10 Jan-11 Jul-03

**Chloride Concentrations Versus Time Graph** 



**Total Dissolved Solids Concentrations Versus Time Graph** 

Sampling Date

Sampling Date

![](_page_6_Picture_0.jpeg)

October 20, 2010

Hack Conder Rice Operating Company 112 W. Taylor Hobbs, NM 88240

RE: BD JUNCTION J-26

Enclosed are the results of analyses for samples received by the laboratory on 10/14/10 9:51.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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

![](_page_7_Picture_0.jpeg)

#### Analytical Results For:

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

Received:	10/14/2010	Sampling Date:	10/12/2010
Reported:	10/20/2010	Sampling Type:	Water
Project Name:	BD JUNCTION J-26	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC26 J~LEA CTY, NM		

#### Sample ID: MONITOR WELL #1 (H021054-01)

Chloride, SM4500Cl-B	mg	/L	Analyze	d By: HM				·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	164	4.00	10/18/2010	ND	108	108	100	3.77	
Sulfate 375.4	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	234	10.0	10/18/2010	ND	38.9	97.2	40.0	5.36	
TDS 160.1	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	922	5.00	10/15/2010	ND				1.40	

### Sample ID: MONITOR WELL #2 (H021054-02)

Chloride, SM4500CI-B	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1060	4.00	10/18/2010	ND	108	108	100	3.77	
Sulfate 375.4	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	473	10.0	10/18/2010	ND	38.9	97.2	40.0	5.36	
TDS 160.1	mg	/L	Analyze	d By: HM					<u>.</u>
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	2910	5.00	10/15/2010	ND				1.40	

#### **Cardinal Laboratories**

\*=Accredited Analyte

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

![](_page_7_Picture_12.jpeg)

![](_page_8_Picture_0.jpeg)

#### Analytical Results For:

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

Received:	10/14/2010	Sampling Date:	10/12/2010
Reported:	10/20/2010	Sampling Type:	Water
Project Name:	BD JUNCTION J-26	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC26 J~LEA CTY, NM		

#### Sample ID: MONITOR WELL #3 (H021054-03)

Chloride, SM4500CI-B	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	152	4.00	10/18/2010	ND	108	108	100	3.77	
Sulfate 375.4	mg	/L	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	206	10.0	10/18/2010	ND	38.9	97.2	40.0	5.36	
TDS 160.1	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	881	5.00	10/15/2010	ND				1.40	

#### Sample ID: RECOVERY WELL 1-DEEP (H021054-04)

Chloride, SM4500Cl-B	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	4.00	10/18/2010	ND	108	108	100	3.77	
Sulfate 375.4	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	114	10.0	10/18/2010	ND	38.9	97.2	40.0	5.36	
TDS 160.1	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	858	5.00	10/15/2010	ND				1.40	

#### **Cardinal Laboratories**

\*=Accredited Analyte

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

![](_page_8_Picture_12.jpeg)

![](_page_9_Picture_0.jpeg)

#### Analytical Results For:

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

Received:	10/14/2010	Sampling Date:	10/12/2010
Reported:	10/20/2010	Sampling Type:	Water
Project Name:	BD JUNCTION J-26	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC26 J~LEA CTY, NM		

#### Sample ID: RECOVERY WELL 1-SHALLOW (H021054-05)

Chloride, SM4500CI-B	mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	4.00	10/18/2010	ND	108	108	100	3.77	
ulfate 375.4 mg/L		Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	108	10.0	10/18/2010	ND	38.9	97.2	40.0	5.36	
TDS 160.1	mg/L		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	833	5.00	10/15/2010	ND				1.40	

**Cardinal Laboratories** 

\*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received by client, its subcliaries, after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subcliaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based to many of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall note performance of Lawrance.

![](_page_9_Picture_10.jpeg)

![](_page_10_Picture_0.jpeg)

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

#### **Notes and Definitions**

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
  Samples reported on an as received basis (wet) unless otherwise noted on report

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidential or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successons arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated resonsor or therwise. Results relate only to the samples identified above. This reproduced except in full with written approval of Cardinal laborationes.

![](_page_10_Picture_11.jpeg)

9 to 9 egs

4 Atre 6