# 1R - 425 - 03

### APPROVALS

## YEAR(S): 2013

### Hansen, Edward J., EMNRD

From:	Hansen, Edward J., EMNRD
Sent:	Thursday, September 05, 2013 5:25 PM
То:	Hack Conder (hconder@riceswd.com)
Cc:	Leking, Geoffrey R, EMNRD; Katie Jones <kjones@riceswd.com> (kjones@riceswd.com);</kjones@riceswd.com>
	Laura Pena (lpena@riceswd.com)
Subject:	Corrective Action Plan Addendum (1R425-03) Approval - ROC Vacuum K-35-1 Boot Site

### RE: Corrective Action Plan (CAP) Addendum for the Rice Operating Company's Vacuum K-35-1 Boot Site Unit Letter K, Section 35, T17S, R35E, NMPM, Lea County, New Mexico Corrective Action Plan Addendum (1R425-03) Approval

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received the Corrective Action Plan Addendum for the Vacuum K-35-1 Boot Site, dated September 4, 2013, and has conducted a review of the addendum. The addendum indicates that Rice Operating Company (ROC) has met the requirements of 19.15.29 NMAC (Rule 29; formerly, Rule 116) for a remediation plan. Therefore, the OCD hereby conditionally approves the Corrective Action Plan Addendum as proposed for above-referenced site in accordance with 19.15.29 NMAC:

ROC must submit to the OCD an annual report of the corrective actions by April 1<sup>st</sup> of each respective year.

Please be advised that OCD approval of this addendum does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen Hydrologist Environmental Bureau

### Hansen, Edward J., EMNRD

From:	Katie Jones <kjones@riceswd.com></kjones@riceswd.com>
Sent:	Wednesday, September 04, 2013 3:29 PM
То:	Hansen, Edward J., EMNRD
Cc:	Hack Conder; Laura Pena
Subject:	ROC - Vacuum K-35-1 (1R425-03) Groundwater Recovery Notification
Attachments:	ROC - Vacuum K-35-1 (1R425-03) MW Sampling.pdf

Mr. Hansen,

ROC has been monitoring MW-2, MW-3, and MW-4 semi-annually, according to NMOCD's response to the September 2011 Termination Request. Chloride concentrations in MW-4 have shown a slight increase in chloride concentration from 380 mg/L in June and August 2011 to 650 mg/L in May 2013. Chloride concentrations up-gradient of the site have also increased to 280 mg/L in May 2013. Concentrations down gradient have remained low, staying around 36 mg/L. A plat showing the monitoring well locations along with the recent chloride concentrations is attached. Based on this increase in MW-4, ROC will begin pumping from the existing recovery well (RW-1) and will begin sampling all the wells (MW-1, MW-2, MW-3, MW-4, and RW-1) on a semi-annual (twice a year) basis. An annual report summarizing the monitoring well sampling and groundwater recovery will be submitted to the NMOCD by April 1<sup>st</sup>. If you have any questions or require any additional information, please contact Hack Conder at (575)631-6432.

Thank you.

Katie Jones Environmental Project Manager RICE Operating Company

										ng E			
	Depth to	Sample					Ethyl	Total					
WN	Water	Date	CI	TDS	Benzene	Toluene	Benzene	Xylenes	Sulfate				
1	57.24	2/16/2011	800	1750	<0.001	<0.001	<0.001	<0.003	68				
1	57.15	6/1/2011	396 352	965	<0.001	<0.001 <0.001	<0.001	<0.003	69.4 75.7	1			
1	57.21 57.19	8/30/2011 12/1/2011	1100	888 2310	<0.001	<0.001	<0.001 <0.001	<0.003	76.3	1			
-				1.010	-01001	-01001	-01001	-01003	70.5	. 1			
	Depth to	Sample	1				Ethyl	Total		1 \			
WN	Water	Date	CI	TDS	Benzene	Toluene	Benzene	Xylenes	Sulfate				
2	57.44	2/16/2011	32	407	<0.001	<0.001	<0.001	<0.003	57	-			
2	57.38 57.41	6/1/2011 8/30/2011	32 32	383	<0.001	<0.001	<0.001	<0.003	61.6 59.2				
2	57.51	12/1/2011	40	391	<0.001	<0.001	<0.001	<0.003	70.3	1			
2	57.74	5/29/2012	36	434	XX	XX	XX	XX	65.7	1			
2	57.92	11/15/2012	36	389	XX	XX	XX	XX	60.5	1			
2	57.9	5/28/2013	36	424	XX	XX	XX	XX	66.1	]			
	Depth to	Sample					Ethyl	Total			e		
W	Water	Date	CI	TDS	Benzene	Toluene	Benzene	Xylenes	Sulfate		Ē		
3	59.24	2/16/2011	128	522	<0.001	<0.001	<0.001	<0.003	63.7		8		
3	59.12	6/1/2011	148	539	<0.001	<0.001	<0.001	<0.003	91.1		R		1
3	59.19 59.2	8/30/2011 12/1/2011	156 176	560 595	<0.001	<0.001 <0.001	<0.001 <0.001	<0.003 <0.003	91.7 92.4		per		6
3	59.55	5/29/2012	204	676	XX	XX	XX	XX	71.9		lop		de
3	59.63	11/15/2012	252	742	XX	XX	XX	XX	91.2		Abandoned ROC line		hose poet
3	59.68	5/28/2013	280	823	XX	XX	XX	XX	81.7		8		-ano
					_	C		2			7-	Battery	MW 2
	_		_		_	C				ned AC	7-	•	MW 2
1W 4 4 4 4 4 4 4 4	Depth to Water 59.15 59.19 59.35 59.32 59.64 59.72 59.83	Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013	CI 680 380 380 700 610 690 650	TDS 1600 941 908 1470 1560 1660 1550	Benzene <0.001 <0.001 <0.001 <0.001 ×X ×X ×X ×X ×X	Toluene <0.001 <0.001 <0.001 ×X ×X ×X ×X ×X ×X	Ethyl Benzene <0.001 <0.001 <0.001 ×X ×X ×X ×X ×X	Total Xylenes <0.003 <0.003 <0.003 <0.003 XX XX XX XX XX XX	Sulfate 72 69.1 71.8 78.3 81.5 80.6 71	400magne	7-	•	-
W 4 4 4 4 4 4 4 4 4 4 4 4	Water           59.15           59.19           59.32           59.64           59.72           S9.83           Depth to           Water	Date 2/16/2011 6/1/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date	680 380 380 610 690 650 Cl	1600 941 908 1470 1560 1660 1550 TDS	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene	<0.001 <0.001 <0.001 ×X XX XX XX Toluene	Benzene           <0.001	Xylenes           <0.003	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate	Abendonied R.	7-	•	-
W 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Water 59.15 59.19 59.35 59.32 59.64 59.72 59.83 Depth to	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample	680 380 380 700 610 690 650	1600 941 908 1470 1560 1660 1550	<0.001 <0.001 <0.001 <0.001 XX XX XX XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX	Benzene           <0.001	Xylenes           <0.003	72 69.1 71.8 78.3 81.5 80.6 71	Abendonied R.	7-	•	-
W 1 1 1 1 1 1 1 1 1 1 1 1	Water           59.15           59.19           59.35           59.32           59.34           59.72           59.83           Depth to           Water           59.15           59.15           59.15           59.15           59.19           59.35	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011	680 380 380 610 690 650 CI 750 476 490	1600 941 908 1470 1560 1660 1550 TDS 1670	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001	<0.001 <0.001 <0.001 ×x ×x ×x ×x ×x Toluene <0.001	Benzene           <0.001	Xylenes           <0.003	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3	Abandonied R.	7-	•	-
W 1 1 1 1 1 1 1 1 1 1 1 1	Water           59.15           59.19           59.35           59.32           59.64           59.72           S9.83           Depth to           Water           59.15           59.12	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011	680 380 380 610 690 650 Cl 750 476	1600 941 908 1470 1560 1660 1550 TDS 1670 1130	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001	<0.001 <0.001 <0.001 ×x ×x ×x ×x ×x Toluene <0.001 <0.001	Benzene           <0.001	Xylenes           <0.003	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5	Abandoned BC	7-	•	
W 4 4 4 4 4 4 4 4 4 1 1	Water           59.15           59.19           59.35           59.32           59.34           59.72           59.83           Depth to           Water           59.15           59.15           59.15           59.15           59.19           59.35	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011	680 380 380 610 690 650 CI 750 476 490	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<0.001 <0.001 <0.001 XX XX XX XX Toluene <0.001 <0.001 <0.001	Benzene           <0.001	Xylenes           <0.003	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5 63.1	Abendoned Bo	7-	•	-
W 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Water 59.15 59.19 59.35 59.32 59.64 59.72 59.83 Depth to Water 59.15 59.19 59.35 59.32	Date 2/16/2011 6/1/2011 12/1/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011	680 380 380 700 610 690 650 650 CI 750 476 490 XX	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090 XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<0.001 <0.001 <0.001 ×X XX XX XX Toluene <0.001 <0.001 ×X	Benzene           <0.001	Xylenes <0.003 <0.003 <0.003 ×X XX XX XX Total Xylenes <0.003 <0.003 <0.003 ×X	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5 63.1 XX	Aleenooned Bo	7-	•	-
IW           4	Water           59.15           59.19           59.35           59.32           59.64           59.72           59.83           Depth to           Water           59.15           59.15           59.19           59.32	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011	680 380 380 700 610 690 650 650 CI 750 476 490 XX	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090 XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<pre>&lt;0.001 &lt;0.001 &lt;0.001 &lt;0.001 XX XX XX Toluene &lt;0.001 &lt;0.001 &lt;0.001 XX XX </pre>	Benzene <0.001 <0.001 <0.001 ×X XX XX Ethyl Benzene <0.001 <0.001 ×X XX XX XX XX XX XX XX XX XX	Xylenes <0.003 <0.003 <0.003 XX XX XX XX Total Xylenes <0.003 <0.003 <0.003 XX XX XX XX XX XX XX XX XX X	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5 63.1 XX	40000	7-	•	Lease Ro
IW           4	Water 59.15 59.19 59.35 59.32 59.64 59.72 59.83 Depth to Water 59.15 59.19 59.35 59.32	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011	680 380 380 700 610 690 650 650 CI 750 476 490 XX	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090 XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<ul> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>xx</li> <li>xx</li> <li>xx</li> <li>xx</li> <li>xx</li> </ul>	Benzene <0.001 <0.001 <0.001 XX XX XX Ethyl Benzene <0.001 <0.001 <0.001 XX XX XX XX XX XX AC 35-	Xylenes <0.003 <0.003 <0.003 XX XX XX XX Total Xylenes <0.003 <0.003 <0.003 <0.003 XX <b>CUUU</b> <b>1 b</b>	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5 63.1 XX	40000	C IIIo	•	Lease Ro
W     4       4     4       4     4       4     4       4     4       4     4       1     1       1     1       1     1	Water 59.15 59.19 59.35 59.32 59.32 59.32 59.32 59.33 Depth to Water 59.15 59.19 59.35 59.32 S9.32	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011	680 380 380 700 610 690 650 Cl 750 476 490 XX	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090 XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<ul> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>xx</li> <li>xx</li> <li>xx</li> <li>xx</li> <li>xx</li> </ul>	Benzene <0.001 <0.001 <0.001 ×x ×x ×x ×x Ethyl Benzene <0.001 <0.001 <0.001 ×x ×x ×x ×x X VAC 35- Is: UL	Xylenes <0.003 <0.003 <0.003 ×x xx xx xx xx xx xx xx xx xx	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5 63.1 XX	40000	C IIIo	Battery	Lease Ro N W S 320
W     4       4     4       4     4       4     4       4     4       4     4       1     1       1     1       1     1	Water 59.15 59.19 59.35 59.32 59.32 59.32 59.32 59.33 Depth to Water 59.15 59.19 59.35 59.32 S9.32	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011	680 380 380 700 610 690 650 Cl 750 476 490 XX	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090 XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<ul> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>&lt;0.001</li> <li>xx</li> <li>xx</li> <li>xx</li> <li>xx</li> <li>xx</li> </ul>	Benzene <0.001 <0.001 <0.001 ×x ×x ×x ×x Ethyl Benzene <0.001 <0.001 <0.001 ×x ×x ×x ×x X VAC 35- Is: UL	Xylenes <0.003 <0.003 <0.003 ×x xx xx xx xx xx xx xx xx xx	72 69.1 71.8 78.3 81.5 80.6 71 Sulfate 71.3 60.5 63.1 XX	40000	C IIIo	Battery	Lease Ro
W 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Water 59.15 59.19 59.35 59.32 59.32 59.32 59.32 59.33 Depth to Water 59.15 59.19 59.35 59.32 S9.32	Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011 5/29/2012 11/15/2012 5/28/2013 Sample Date 2/16/2011 6/1/2011 8/30/2011 12/1/2011	680 380 380 700 610 690 650 Cl 750 476 490 XX	1600 941 908 1470 1560 1660 1550 TDS 1670 1130 1090 XX	<0.001 <0.001 <0.001 <0.001 XX XX XX XX Benzene <0.001 <0.001 <0.001	<0.001 <0.001 <0.001 ×X ×X ×X ×X ×X ×X ×X ×X ×X ×X ×X ×X ×X	Benzene <0.001 <0.001 <0.001 ×x ×x ×x ×x Ethyl Benzene <0.001 <0.001 <0.001 ×x ×x ×x ×x X VAC 35- Is: UL	Xylenes <0.003 <0.003 <0.003 xx xx xx xx xx xx xx xx xx x	72 69.1 71.8 78.3 81.5 80.6 71 71 Sulfate 71.3 60.5 63.1 XX	Abano	C IIIo	Battery	V Lease Ro N W S 320



Vacuum K-35-1