

AP - 60

**ANNUAL  
MONITORING REPORT**

**YEAR(S):**  
2009

**Texerra**

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April 6th, 2010

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

RECEIVED  
APR - 9 2010  
Environmental Bureau  
Oil Conservation Division

RE: **Annual Report**  
Rice Operating Company  
EME K-33-1 – NMOCD AP-60

Sent via E-mail and U.S. Certified Mail: No. 7007 0710 0003 0305 3835

Mr. Hansen:

This letter summarizes progress made for the above-referenced project over the past calendar year. In this report we are combining and presenting groundwater monitoring data from the EME K-33-1 and the EME Sarah Phillips sites because of their close proximity (Figure 1).

Groundwater chloride data shows little difference between up-gradient, near-source and down-gradient wells for the two sites (averaging approximately 650 ppm for all but the far up-gradient monitor well, MW-4 (Figure 2, Table 1)). In light of the proximity of these sites to an area of known pre-existing groundwater chloride impact (Figure 3) it appears that these moderately elevated levels of chlorides may be due to regional, up-gradient impacts. We believe that MW-4 may be near the edge of this regional chloride plume.

Over the course of this coming year we plan the following actions:

1. We will continue to monitor groundwater at these two locations for chlorides, TDS, sulfate and BTEX.
2. We will evaluate in more detail the magnitude and areal extent of the pre-existing regional groundwater chloride plume.
3. We will work to re-establish native vegetation across the site.

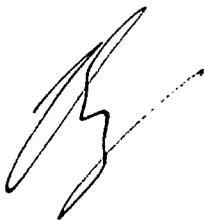
We believe that further and more detailed evaluation of pre-existing groundwater chloride impacts will help us to determine the best forward course of action to propose to NMOCD for these projects.

**EME K-33-1**

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

Please do not hesitate to contact either myself or Rice Operating Company if you have any questions or need additional information.

Sincerely,

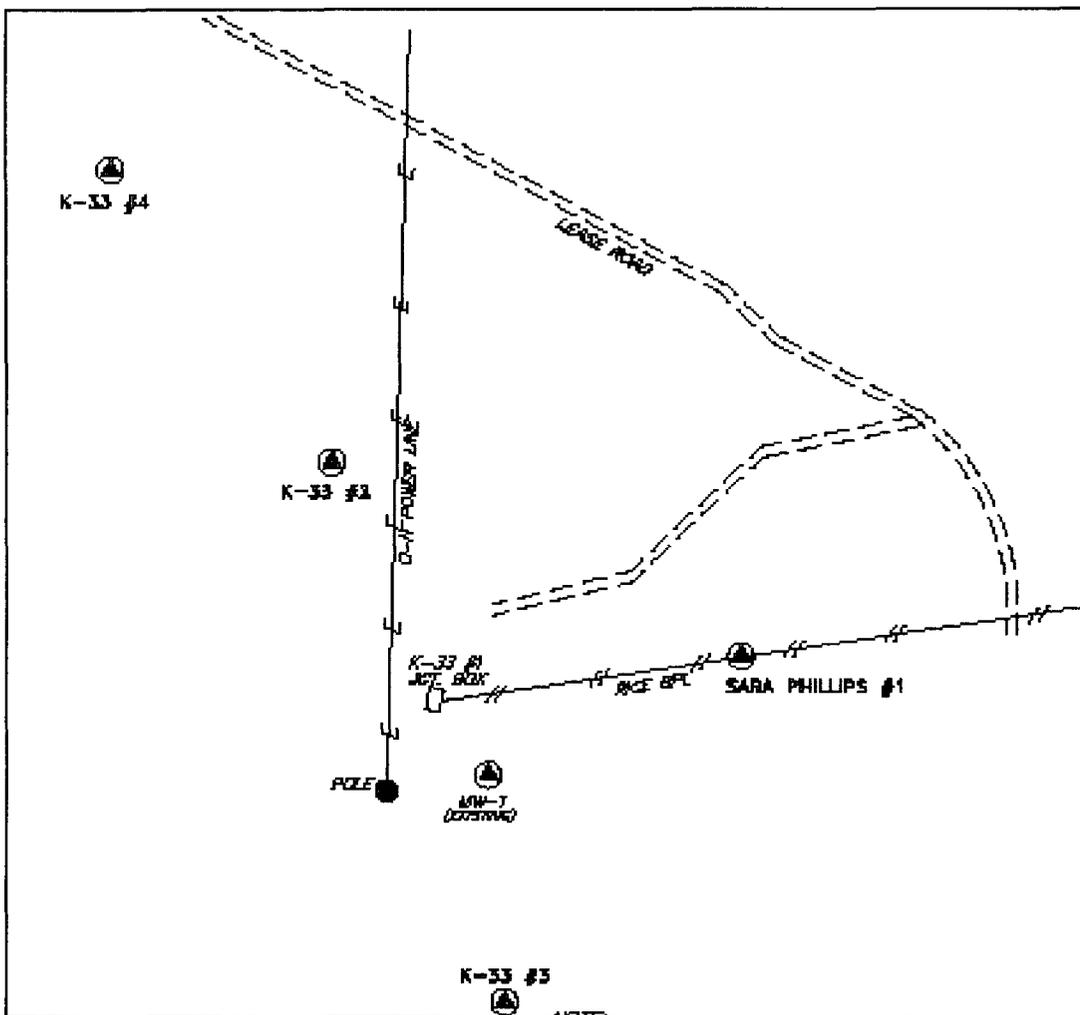
A handwritten signature in black ink, appearing to be 'L. Peter Galusky, Jr.', written in a cursive style.

L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company



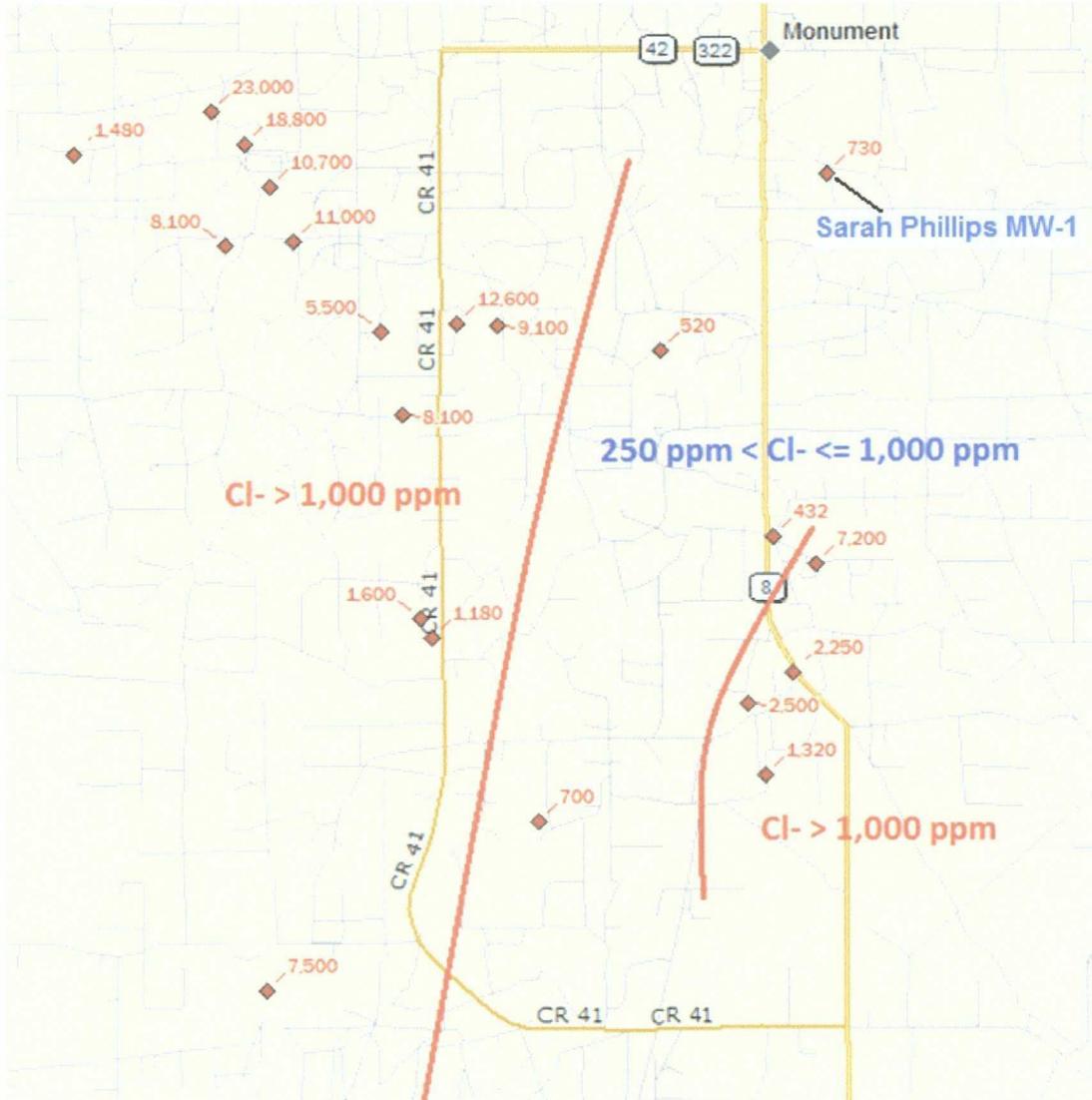
Figure 1 – Locations of Sarah Phillips and K-33-1 sites.



**Figure 2** – Locations of groundwater monitor wells at EME K-33 and Sarah Phillips locations. The prevailing direction of groundwater flow is toward the southeast (lower right).

Site	Well ID	Location	2009 groundwater chloride conc (ppm)				year avg
			1st qtr	2nd qtr	3rd qtr	4th qtr	
K-33	MW-1	near source, down-gradient	740	660	660	650	678
K-33	MW-2	up-gradient	600	608	580	550	585
K-33	MW-3	down-gradient	650	628	620	630	632
K-33	MW-4	far up-gradient	288	284	272	240	271
Sarah Phillips	MW-1	near source	720	700	660	730	703

**Table 1** – 2009 groundwater chloride concentrations at the Sarah Phillips and K-33-1 locations.



**Figure 3** – Groundwater chloride concentrations in “up-gradient” wells (4<sup>th</sup> qtr, 2009) at various Rice Operating Company locations. The 4<sup>th</sup> Qtr 2009 chloride concentration of the near-source monitor well at the Sarah Phillips location is shown in the upper right portion of the figure.