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Name:	U1101841
Title:	Approval With Modification - Reliability Assessment of Multiscreened Westbay Wells
Date Received:	9/29/2011
Addressee Name:	Michael J. Graham, ADEP
Originator:	John E. Kieling, LASO
Action Item Description:	
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Responsible for Action:	Search
Responsible Office:	
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EP2011-5448

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 29, 2011

George J. Rael
Assistant Manager
U.S. Department of Energy
National Nuclear Security Administration
Los Alamos Site Office
3747 West Jemez Rd, MSA316
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Michael J. Graham
Associate Director Environmental Programs
Los Alamos National Security, L.L.C.
P.O. Box 1663, MS M991
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RE: APPROVAL WITH MODIFICATION
RELIABILITY ASSESSMENT OF MULTISCREENED WESTBAY WELLS
LOS ALAMOS NATIONAL LABORATORY
EPA ID#NM0890010515
HWB-LANL-11-059

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy (DOE) and Los Alamos National Security, L.L.C.'s (collectively, the Permittees) document entitled *Reliability Assessment of Multiscreened Westbay Wells* (Report) dated August, 2011 and referenced by EP2011-0215. NMED has reviewed the Report and hereby issues this approval with the following modifications.

1. **Section 4.3, CdV-R-37-2 Screen 3, Is the Screen Producing Reliable Data?, page 9:**

   The Permittee's statement "*These indicators suggest water-quality data from this screen are representative whether the sample is collected with a nonpurgeable or purgeable sample system.*" is not accurate because differences in the concentration of several constituents were observed between some of the nonpurgeable (no-purge) and purgeable (purged) samples.

Examples of the differences include:

- Chloride concentration increased from 1.88 mg/L for the no-purge sample to 2.75 mg/L for the 10-casing volume purge sample;
- nitrate as nitrogen concentration increased from 0.374 mg/L for the no-purge sample to 0.479 mg/L for the 10-casing volume purge sample;
- dissolved chromium concentration decreased from 4.97 µg/L for the no-purge sample to less than 2 µg/L for the 10-casing volume purge sample;
- dissolved nickel concentration increased from 0.551 µg/L for the no-purge sample to 1.03 µg/L for the 10-casing volume purge sample; and
- dissolved oxygen increased from 5.78 mg/L for the no-purge sample to 7.53 mg/L for the 10-casing volume purge sample.

These differences suggest that the no-purge sample contained a larger component of water that is not representative of formation water.

2. **Section 4.5, CdV-R-15-3 Screen 4, Is the Screen Producing Reliable Data?, page 12:**

   Similar to NMED's comment above, slight differences in geochemical characteristics between the no-purge and the 10-casing volume samples were observed, suggesting that the no-purge sample was likely a mixture of impacted and non-impacted native groundwater. Examples include:

   - the dissolved chromium concentration decreased from 5.22 µg/L in the no-purge sample to less than 2 µg/L in the 10-casing volume purge sample; and
   - the dissolved zinc concentration increased from less than 3.3 µg/L for the no-purge sample to 5.46 µg/L for the 10-casing volume purge sample.

3. **Section 4.7, R-26 Screen 1, Is the Screen Producing Reliable Data?, page 14:**

   Observed concentrations for some constituents were different between the no-purge and the 10-casing volume purge samples suggesting that the no-purge samples were not representative:

   - the dissolved chromium concentration decreased from 3.90 µg/L for the no-purge sample to less than 2 µg/L for the 10-casing volume purge sample;
   - the dissolved manganese concentration increased from less than 2.0 µg/L for the no-purge sample to 5.41 µg/L for the 10-casing volume purge sample; and
   - the dissolved oxygen concentration increased from 5.88 mg/L for the no-

purge sample to 7.03 mg/L for the 10-casing volume purge sample.

4. **Tables 2.0-2 through 2.0-4, pages 57 – 63:**

   Results with less than symbols (<) as presented in Tables 2.0-2 through 2.0-4 are misleading in that they do not reflect the concentration of the constituent with respect to the detection limit. Specifically, the "<" symbols are associated with the quantitation limit, not the detection limit for that particular result. For example, filtered chromium results for CdV-R-37-2 Screen 3, as shown on Table 2.0-3 (page 60), are 4.97 µg/L for the no-purge sample and <10 µg/L for the remaining four results. This condition suggests that dissolved chromium was not present in the sample at a concentration greater than 10 µg/L. In reality, dissolved chromium was not present at a concentration greater than 2 µg/L where 2 µg/L is the detection limit for chromium. This is important when comparing results with local background concentrations, assessing oxidation-reduction reactions, and evaluating contaminant trends and other characteristics.

The Permittees must provide the detection limit for all non-detectable results in all future documents where water-quality data are presented.

No revision to the Report is necessary. Should you have any questions or comments regarding this approval, please contact Michael Dale at (505) 661-2673.

Sincerely,

John E. Kieling
Acting Chief
Hazardous Waste Bureau

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File: Reading and LANL 2011 – Westbay Wells Reliability Assessment Report

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