

Permit

ENTERED



NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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Lieutenant Governor

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Secretary

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Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 22, 2009

Donald L. Winchell, Jr., Manager
Los Alamos Site Office-Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, NM 87544

Chris Cantwell, Associate Director
Environment, Safety, Health & Quality
Los Alamos National Security, LLC
P.O. Box 1663, MS K491
Los Alamos, NM 87545

**RE: NOTICE OF VIOLATION
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515**

Dear Messrs. Winchell and Cantwell:

The New Mexico Environment Department (the Department) hereby issues this Notice of Violation (NOV) to the United States Department of Energy (DOE) and Los Alamos National Security, LLC (collectively, the Respondents) for violation of the March 1, 2005 Compliance Order on Consent (Consent Order) issued under the New Mexico Hazardous Waste Act (HWA), NMSA 1978, § 74-4-10. The violation occurred when the Respondents failed to implement the requirements set forth in the approved "*Work Plan to Plug and Abandon Mortandad Canyon Wells Test Well 8 and MCOBT-4.4*".

The Department hereby gives the Respondents notice of the following violation:

The Consent Order is the result of negotiations between the Respondents and the Department beginning in December of 2002 and ending in December of 2003. On September 1, 2004, the Department released the Consent Order for public review and comment. The Consent Order was signed and effective beginning March 1, 2005, and revised on June 18, 2008.

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Section XII of the Consent Order required submittal of an investigation Report for Mortandad Canyon (submitted October 28, 2006). The Department issued an Approval with Direction for the *Mortandad Canyon Investigation Report* on February 23, 2007. The Department's approval required the Respondents to submit a "comprehensive assessment and evaluation of each well and well screen intersecting intermediate and regional groundwater in the Mortandad Canyon Watershed" within 120 days. The Respondents submitted the *Mortandad Canyon Groundwater Monitoring Well Network Evaluation* (Evaluation) on June 28, 2007. The Evaluation recommended submitting a work plan to plug and abandon well MCOBT-4.4. The Department issued an Approval with Direction of the *Mortandad Canyon Groundwater Monitoring Well Network Evaluation* on August 6, 2007. On October 31, 2007, the Department received the Respondents' "Work Plan to Plug and Abandon Mortandad Canyon Wells Test Well 8 and MCOBT-4.4" (Plan). The Respondents proposed to plug and abandon Test Well 8 and MCOBT-4.4 on May 30, 2008 and June 31 [sic], 2008, respectively, and submit a completion report to NMED by August 15, 2008. The Department approved the Plan on December 7, 2007. The Department's approval letter stressed the need for compliance by stating "[t]he Permittees must submit a completion report to NMED to document activities that will be conducted for plugging and abandoning these two wells no later than August 15, 2008." On August 15, 2008, the day the completion report was due, the Department received the Permittees' *Requests for Extension to Complete the Plugging and Abandonment Activities at Test Well 8 and MCOBT-4.4*. The Respondents' sole basis for the request for extension was "the resource limitations that Los Alamos National Laboratory (LANL) was experiencing from the drilling field campaigns that have been ongoing since Spring 2008", indicating that the Laboratory has not sought appropriate levels of funding since at least 2002 (when the Respondents determined the well was leaking), and that budget limitations have prevented the Respondents from fulfilling their legal obligations to protect human health and the environment. The Department denied the request on August 26, 2008.

MCOBT-4.4 was drilled and completed in 2001. The borehole was drilled to a total depth of 767 feet (ft) below ground surface (bgs) and completed at a depth of 545 ft bgs. The well was installed to characterize and potentially monitor contaminated groundwater beneath Mortandad Canyon at a depth of 500 ft bgs. Contamination in this aquifer, as provided from the sampling of this well, includes chromium at 0.054 milligrams per liter (mg/L), nitrate as nitrogen (NO₃ as N) at 16 mg/L, perchlorate at 0.26 mg/L, and tritium at 23,500 picocuries per liter. The Respondents' December 2002 document titled *Characterization Well MCOBT-4.4 and Borehole MCOBT-8.5 Completion Report* (LA-13993-MS; page 39) states that: a) the static water level at this zone was 493 feet bgs, b) the likely producing zone is present from 516 to 524 feet bgs, and c) that Cerros del Rio basalts from 522.5 to 535 feet bgs was considered a possible perching layer. The screen was placed between 485.4 to 524 feet bgs with primary and secondary filter packs extending from 474 to 527 feet bgs. The base of the primary filter pack was placed 4.5 feet into the perching horizon, potentially breaching the perching unit. From July, 2001 to January, 2002, water levels declined from 493 feet bgs to 519 feet bgs. A borehole video log taken on January 30, 2002 showed water cascading from the screen at 497 feet bgs, indicating that the zone was in a transient or hydrostatic disequilibrium state. Water levels have gradually declined from the initial 493 feet bgs to near dry conditions in 2007, also indicating a progressive transient condition. The Respondents' document *Mortandad Canyon Groundwater Monitoring*

Well Network Evaluation, Revision 1, dated September 2007 (EP2007-0590), states that “[a]fter discussions with NMED, it was decided that the perching layer might be breached by the well’s filter pack, causing the water to drain. A decision was made to replace MCOBT-4.4, and replacement well MCOI-4 was installed 70 ft to the northwest in autumn 2004. Water levels from MCOI-4 are about 4 ft higher than those for MCOBT-4.4, generally confirming the breach of the filter as the cause of lower water levels observed in MCOBT-4.4 following well development.” A yield of two-gallons per minute, as interpreted from an open-borehole video log, from this aquifer would equate to the leakage of approximately eight million gallons of contaminated groundwater since the well was installed.

Chromium and NO₃ as N concentrations in the aquifer exceed the New Mexico Water Quality Control Commission Regulations standards of 0.050 mg/L and 10 mg/L, respectively. The perchlorate concentration exceeds the United States Environmental Protection Agency’s (EPA) Interim Drinking Water Health Advisory of 0.015 mg/L (USEPA, 2008, EPA 822-R-08-25). Nearby drinking-water production wells PM-5, PM-4 and O-4 are located approximately 0.4, 0.8, and 1.0 miles, respectively, from MCOBT-4.4. Following the approved workplan would have mitigated the contamination of the aquifer. By not following the approved work plan, the Respondents allowed these conditions to persist thus facilitating the migration of 890,000 gallons of contaminated groundwater into the vadose zone and in the direction of the regional aquifer since July 1, 2008. The proximity of this leaking contaminated well to the drinking-water supply constitutes a substantial potential for harm to human health and the environment.

The Respondents’ failure to plug and abandon Test Well 8 and MCOBT-4.4 and submit the subsequent completion report is a violation of the requirements set forth in Sections III.A, III.U, and VII.B.1 of the Consent Order. These requirements are, as prescribed in Section III.A, for corrective action for releases of groundwater contaminants listed at 20.6.2.3103 New Mexico Administrative Code (NMAC), toxic pollutants listed at 20.6.2.7 VV NMAC and explosive compounds, nitrate, and perchlorate pursuant to section 74-9-36(D) of the New Mexico Solid Waste Act. As prescribed in III.U, the Consent Order is an enforceable document. Because the work plan was an approved corrective measure under the Consent Order, the work plan is enforceable under the Consent Order.

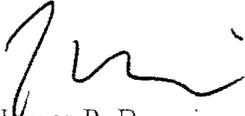
On December 10, 2008, the Respondents and the Department agreed to use Test Well 8 for a pumping test scheduled for Spring 2009 in lieu of plugging and abandoning the well. Therefore, Test Well 8 is not included as part of the violation. However, as a corrective interim measure, Test Well 8 shall be plugged and abandoned within 60 days of the completion of the pumping test.

In accordance with section 74-4-10(C) of the HWA, the Department may assess a civil penalty of not more than \$25,000 for each day of noncompliance with a compliance order. In this matter, the Department proposes to assess a civil penalty of \$1,871,100.00 to settle its claims for the violation described in this NOV. A detailed penalty calculation worksheet is being provided under separate cover.

Messrs. Winchell and Cantwell
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The Department requests a meeting with appropriate representatives of the Respondents for the purposes of negotiating a settlement relating to this Notice of Violation. Any action the Respondents take in response to this letter does not relieve the Respondents of their obligation to comply with all applicable laws, regulations and Orders. If you have any questions regarding this letter, or wish to arrange a settlement meeting, contact me directly within ten (10) days of your receipt of this letter at the above address, or at (505) 476-6016.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: A. Vollmer, NMED HWB
D. Cobrain, NMED HWB
K. Roberts, NMED HWB
M. Dale, NMED HWB
T. Hughes, NMED OGC
T. Skibitski, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
L. King, EPA 6PD-N
V. George, ENVF-DO, MS J978
G. Rael, DOE LASO, MS A316
M. Graham, LANL, ADEP, M991
file: Reading and LANL '09, TA-3

DRAFT PENALTY CALCULATION
CONFIDENTIAL - FOR SETTLEMENT PURPOSES ONLY

Violation # 1		
Facility: LANL		
Date violation observed: 8/15/08		
Citation/Violation: Failure to implement an approved work plan to plug & abandon Mortandad Canyon well MCOBT-4.4		
Violation of Consent Order Sections III.A, III.U and VII.B.1		
Location: Mortandad Canyon		
PENALTY AMOUNT:		
1 Gravity based penalty from matrix		\$22,500
(a) Potential for harm	major	
(b) Extent of deviation	moderate	
(c) Number of counts	1	
2 Multiple count adjustment (multiply line 1 by counts)	\$	22,500
3a Multiday penalty from matrix	\$	4,500
3b Days of noncompliance (or other appropriate number)		304
3c Multiday adjustment (multiply line 3b minus 1 by line 3a)	\$	1,363,500
4a Multiday penalty from matrix		
4b Days of noncompliance (or other appropriate number)		
4c Multiday adjustment (multiply line 4b by line 4a)	\$	-
5a Multiday penalty from matrix		
5b Days of noncompliance (or other appropriate number)		
5c Multiday adjustment (multiply line 5b by line 5a)	\$	-
6 Add lines 2, 3c, 4c, and 5c	\$	1,386,000
7 Percent increase/decrease for good faith		0%
8 Percent increase for willfulness/negligence		15%
9 Percent increase for history of noncompliance		20%
10 Total percentage (add lines 7 through 9)		35%
11 Multiply line 6 by line 10	\$	485,100
12 Economic benefit penalty	\$	-
13 Add lines 6, 11, and 12 for total penalty amount for this violation	\$	1,871,100