SNL09

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NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 12, 2009

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Francis B. Nimick
Deputy Director
Nuclear Energy & Global Securities Technologies
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RE: NOTICE OF DISAPPROVAL: DOE/SANDIA RESPONSES TO NMED'S NOTICE OF DISAPPROVAL FOR CORRECTIVE MEASURES EVALUATION REPORT FOR TECHNICAL AREA-V GROUNDWATER, JULY, 2005 SANDIA NATIONAL LABORATORIES
EPA ID# NM5890110518
HWB-SNL-05-027

Dear Ms. Davis and Mr. Nimick:

The New Mexico Environment Department (NMED) has reviewed the Department of Energy/Sandia Corporation's (Permittees) responses to NMED's Notice of Disapproval (NOD) dated July 28, 2008, concerning the *Corrective Measures Evaluation Report for Technical Area-V Groundwater*, dated July, 2005, and hereby issues this second NOD. The Permittees' responses were submitted in a letter dated April 14, 2009 and received by NMED on April 24, 2009. The responses primarily address field work related to site characterization.

Specific Comments

As Appendix A of the response, the Permittees submitted: *Technical Area V Groundwater Investigation Work Plan, Installation of Groundwater Monitoring Wells TAV-MW11, TAV-MW12, and TAV-MW13, Installation of Soil-Vapor Monitoring Wells TAV-SV01, TAV-SV02, and TAV-SV03*, dated April, 2009 (hereinafter referred to as the Work Plan). NMED has the following comments regarding the Work Plan.

SNL1187

Comment 1
Figure 1 of the Work Plan shows the proposed locations of the three new groundwater monitoring wells. TAV-MW11 is proposed to be approximately 850 feet from the nearest existing monitoring well. NMED considers this too far to the east for the well to be effective at characterizing the extent of the plume. An appropriate location for the installation of TAV-MW11 is closer to the proposed location of TAV-SV03, about 425 feet from the nearest well (see Figure 1 enclosed with this letter).

Comment 2
As proposed in Figure 1 of the Work Plan, TAV-MW12 would be located approximately 625 feet from the nearest existing monitoring well. NMED considers this too far to the south for the well to be effective at characterizing the extent of the plume. An appropriate location for TAV-MW12 is considered to be a few hundred feet to the northwest of the proposed location (see Figure 1 of this letter).

Comment 3
Groundwater at TAV-MW10 exhibits TCE above the maximum concentration limit (MCL) and has an increasing nitrate-concentration trend suggesting that nitrate levels are beginning to exceed the MCL (see Figure 2 enclosed with this letter). This well can therefore no longer be used to delineate the outline of the plume (i.e., the area of the plume where concentrations are below MCLs). Another well is needed to characterize the plume in this area of Technical Area – V (TA-V). Even if groundwater samples from TAV- MW11 and TAV-MW12 are nondetect with respect to TCE and nitrate, TAV-MW10 would show the plume outline is not resolved. A suggested location for this additional well is shown in Figure 1 of this letter.

Comment 4
Section 10 of the Work Plan, Sampling (page A-9, last paragraph), states "the existing groundwater monitoring wells (AVN-1, LWDS-MW1, LWDS-MW2, TAV-MW2, TAV-MW3, TAV-MW4, TAV-MW5, TAV-MW6, TAV-MW7, TAV-MW8, TAV-MW9and TAV-MW10) will be sampled annually". Those wells which have a history of no TCE detections in groundwater can be sampled two times a year as long as groundwater samples continue to have no TCE detections. These wells include AVN-1, LWDS-2, TAV-MW3, TAV-MW5, TAV-MW7, and TAV-MW9.

The other wells which have a history of TCE detections in groundwater shall be sampled quarterly, because contaminant trends are an important part of determining stability of the plume and effectiveness of natural attenuation. These wells include LWDS-MW1, TAV-MW 2, TAV-MW4, TAV-MW6, TAV-MW8 and TAV-MW10. If a well with no history of TCE detections has a TCE detection in groundwater, sampling of groundwater at the well shall revert to a quarterly frequency. If a well that is not sampled on a quarterly frequency has a nitrate detection in groundwater at or above the nitrate MCL in a sampling event, or at 80% or greater of the nitrate MCL in two consecutive sampling events, sampling at the well shall revert to a quarterly frequency. New wells shall be sampled quarterly for at least eight events, as stated in Section 10 of the Work Plan.

Comment 5

Section 10.1 of the Work Plan, Groundwater Sampling (page A-10, last paragraph), states "…samples will be collected and analyzed for VOCs and nitrate plus nitrite...." General chemistry parameters (nitrate/nitrite, sulfate, chloride, sodium, carbonate/bicarbonate, calcium, potassium, magnesium, total organic carbon, Eh, pH, dissolved oxygen, dissolved manganese, dissolved iron, sulfide, alkalinity, temperature, and any other parameter that may be useful in implementing monitored natural attenuation (MNA)) and perchlorate must be added to the list of analytes for the new groundwater monitoring wells.

Comment 6

There is no mention of geophysically logging the wells in the Work Plan. The Permittees must conduct geophysical logging through the PVC-casing in both new and existing groundwater monitoring wells using induction, neutron, and gamma logging techniques. Lithologic information above, at, and below the water table is critical in understanding the geohydrologic conditions at TA-V (screened lithologies, major units, bedding continuities and orientations). Presently, catching and describing cuttings being blown up the borehole approximately every 10 vertical feet, geologic boring logs produced by different geologists and geophysically logging through steel casing provides inconclusive data. Geophysically logging through the PVC casing in the wells using appropriate sized tools should yield more complete and objective data. In addition, the Permittees may conduct neutron and gamma logs through the drive casing of the new wells, as they have at other wells, for consistency.

General Comment

Because MNA is the Permittees' preferred remedial alternative, any supporting testing and/or documentation that can be conducted during the time of the drilling and groundwater sampling activities that shows that MNA is actually occurring at the site and that can be used for site-specific half-life estimates are encouraged by NMED. These may include comparison of appropriate groundwater and geochemical parameters both within and outside the plume and noting any relevant hydrochemical changes with time, and comparison with existing data. TCE reduction by MNA in aerobic environments is a relatively new and active field, and recent and upcoming developments may prove helpful in showing active natural attenuation.

NMED also notes that of the first 8 comments in the original NOD letter, which concerned further characterization and miscellaneous comments, some are not resolved now (Comments 2, part of 4, 6, and 7) but will be addressed in the revised conceptual model and revised corrective measures evaluation (CME) report. Also comments 9 through 21 of the original NOD letter, which were comments concerning revisions to the CME report, were not resolved now, but need to be addressed in the revised conceptual model or revised CME Report. NMED reserves the right to comment on such unresolved issues when the revised conceptual model and revised CME Report are submitted in the future, or through any other exchange of information.

The Permittees must submit a revised Work Plan that proposes well locations consistent with comments 1, 2, and 3, and addresses the other comments contained in this letter. The revised

Work Plan, in consideration of all of the comments above, must describe the work that will be performed to adequately characterize the contaminated groundwater and hydrogeology at TA-V. The revised Work Plan must also contain a schedule of the work to be completed, including the dates of submission to the NMED of an investigation report and revised CME Report. The revised Work Plan shall be submitted to NMED by November 16, 2009.

If you have any questions regarding this matter, please contact Mr. Sid Brandwein of my staff at (505) 222-9504.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
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File: SNL 2009 and Reading
SNL-05-027

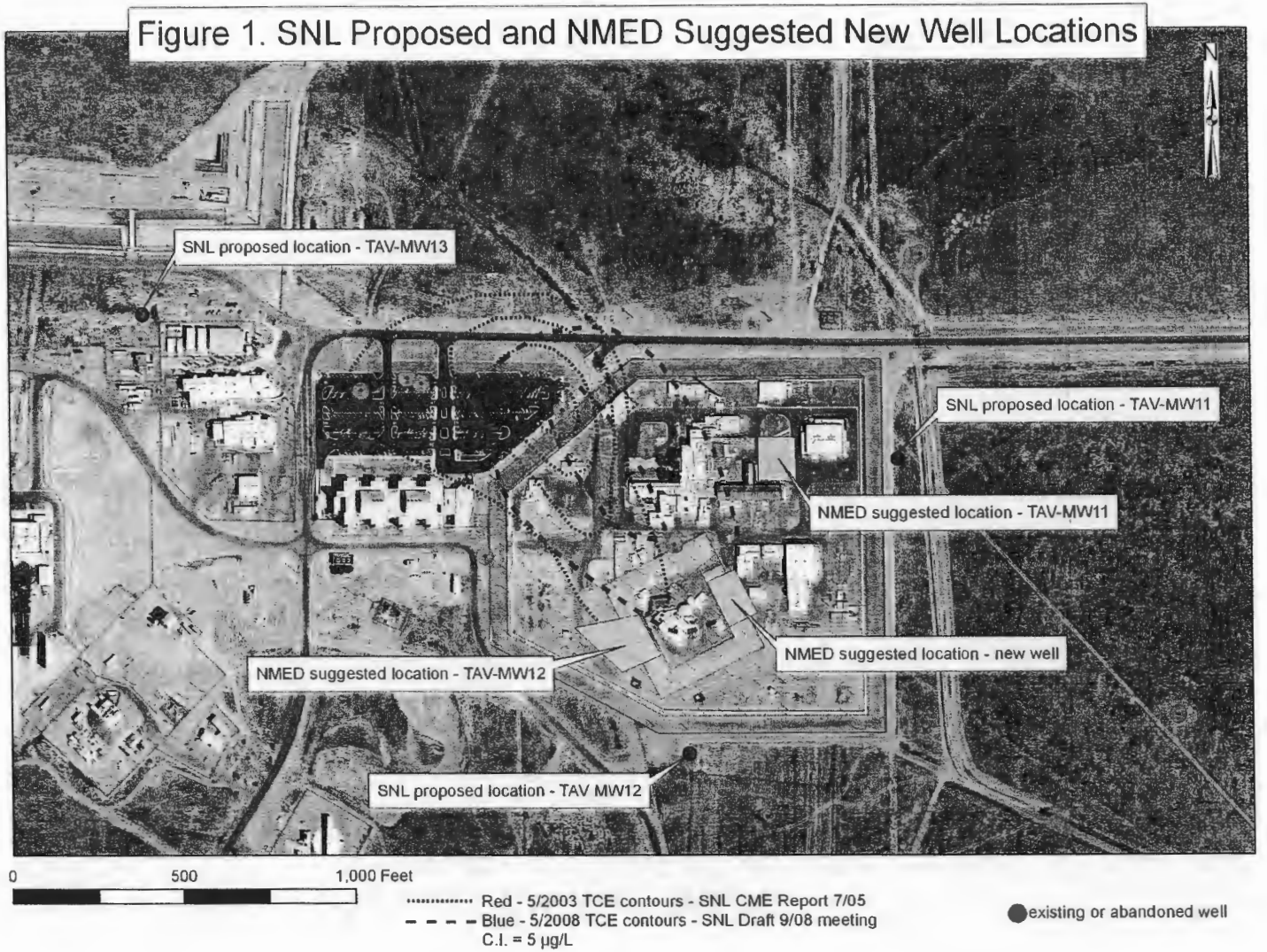

Figure 1. SNL Proposed and NMED suggested New Well Locations.

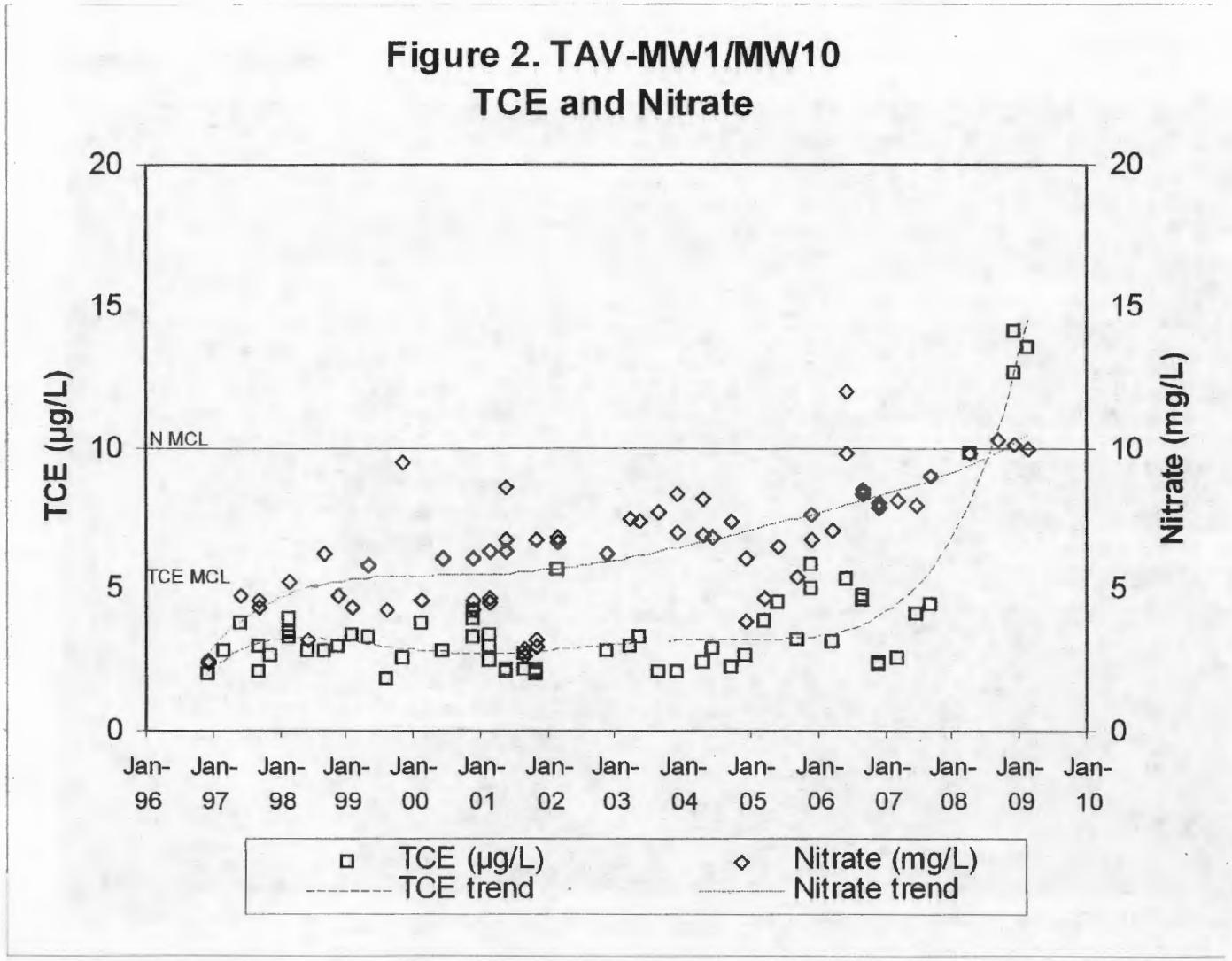

Figure 2. TAV-MW1/10 TCE and Nitrate.