DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

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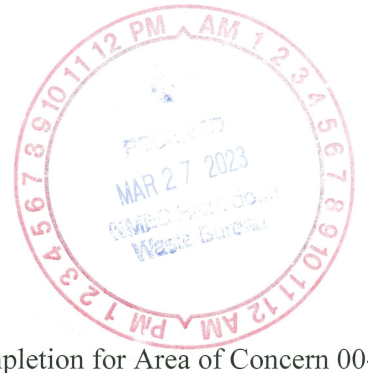

Mr. Dave Cobrain
Acting Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Request for Certificate of Completion for Area of Concern 00-027 in the Middle Los Alamos Canyon Aggregate Area

Reference(s):
1. Document ER2005-0021, "Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027," dated June 2005
2. New Mexico Environment Department Letter, D. Gregory to D. McInroy, "Notice of Disapproval (NOD) the Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027," dated July 17, 2006
3. Letter EP2006-0761, A. Phelps and D. Gregory to J. Bearzi, "Submittal of the Response to the Notice of Disapproval for the Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027," dated August 21, 2006
4. New Mexico Environment Department Letter, J. Bearzi to D. Gregory and D. McInroy, "Approval of the Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027, Technical Area 00," dated August 30, 2006
5. New Mexico Environment Department Document, "Technical Background Document for Development of Soil Screening Levels, Revision 2, Volume 1, Tier 1: Soil Screening Guidance Technical Background Document," dated February 2004
6. Letter ER2002-0427, D. McInroy to J. Young, "Submittal of Voluntary Corrective Action (VCA) Plan for Potential Release Sites (PRSs) 0-030(b)-00, 0-027, 0-030(a), 0-029(a,b,c), 0-010(a,b), and 0-033(a)," dated June 20, 2002

Dear Mr. Cobrain:

In accordance with Section XXI of the 2016 Compliance Order on Consent (Consent Order), the U.S. Department of Energy (DOE) is requesting a certificate of completion with controls for the following area of concern (AOC) within the Middle Los Alamos Canyon Aggregate Area:

- AOC 00-027, Former Storage Area

AOC 00-027 was recommended for no further action in the "Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027," (Voluntary Corrective Action [VCA] addendum [Reference 1]). The VCA addendum concluded the nature and extent of contamination are defined at AOC 00-027. In addition, the VCA addendum concluded that AOC 00-027 poses no potential unacceptable risks to human health under the industrial

scenario and no potential unacceptable risk to ecological receptors (i.e., there are no viable pathways for exposure to ecological receptors at this site). Although the VCA addendum indicated AOC 00-027 poses a potential unacceptable noncarcinogenic cancer risk under the residential scenario, industrial land use is the current and projected future land use (the property is zoned for commercial use but not residential use). There are no radionuclide chemicals of potential concern at AOC 00-027 and dose was not evaluated.

The New Mexico Environment Department (NMED) issued the "Notice of Disapproval for the Addendum to the Completion Report for the Voluntary Corrective Action using a Soil Vapor Extraction System at Area of Concern 0-027" on July 17, 2006 (Reference 2). The notice of disapproval (NOD) required Los Alamos National Laboratory (LANL) to evaluate risk for the construction worker scenario at AOC 00-027. LANL's submittal of the "Response to the Notice of Disapproval for the Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027," dated August 21, 2006, (Reference 3) contained an evaluation of human health risk for the construction worker scenario. The results of this evaluation showed a cancer risk of 1.79×10^{-7}, which is less than NMED's target of 1×10^{-5}, and a hazard index (HI) of 1.74, which is greater than NMED's target of 1. The NOD response indicated no construction activities are planned for the site, which is the location of the Knights of Columbus Hall and associated parking lot.

The VCA addendum, including the NOD response, was approved in NMED's "Approval of the Addendum to the Completion Report for the Voluntary Corrective Action using a Soil Vapor Extraction System at Area of Concern 0-027 Technical Area 00," letter dated August 30, 2006 (Reference 4).

Although no construction activities are currently planned for AOC 00-027, the site is located on private property zoned for commercial use and future construction activities are possible. The NOD response identified potential unacceptable noncarcinogenic human health risk under the construction worker scenario. Most of the noncarcinogenic risk was due to 1,2,4-trimethylbenzene (hazard quotient [HQ] equal to 0.56) and 1,3,5-trimethylbenzene (HQ equal to 0.55). The construction worker soil screening levels used in the NOD response (171 mg/kg for 1,2,4-trimethylbenzene and 73.3 mg/kg for 1,3,5-trimethylbenzene) were from NMED's 2004 risk assessment guidance (Reference 5). Construction worker risk was evaluated using results from eight samples collected from the depth interval 0–12 ft below ground surface (bgs). Because 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were each detected in only two samples, upper confidence limits could not be calculated and the maximum detected concentrations were used as exposure point concentrations (EPCs) for evaluating risk. Trimethylbenzene [1,2,4-] was detected at concentrations of 2.43 mg/kg and 95.4 mg/kg and 1,3,5-trimethylbenzene was detected at concentrations of 1.8 mg/kg and 40.3 mg/kg. Each chemical was not detected in six samples with detection limits ranging from 0.00098 mg/kg to 0.23 mg/kg. The concentration distributions for both chemicals are characterized by a maximum concentration at least one order of magnitude greater than the only other detected concentration and two to four orders of magnitude greater than the detection limits for non-detected results. The maximum concentrations are not representative of sitewide exposure concentrations and use of the maximum concentrations as EPCs overestimates risk. The medians of the detected concentrations and detection limits should be more representative of the central tendency of the data. The median values are 0.0014 mg/kg for 1,2,4-trimethylbenzene and 0.0033 mg/kg for 1,3,5-trimethylbenzene. Use of the medians as EPCs results in HQs of 0.0000082 for 1,2,3-trimethylbenzene and 0.000045 for 1,3,5-trimethylbenzene and an HI of 0.63, which is less than the NMED target of 1.

The vapor intrusion pathway is potentially applicable for commercial land use. Although the vapor intrusion pathway was not evaluated during the VCA, indoor air sampling was performed inside the Knights of Columbus Hall as part of the Resource Conservation Recovery Act facility investigation and

results were reported in the "Voluntary Corrective Action Plan for Potential Release Sites 0-030(b)-00, 0-027, 0-030(a), 0-029(a,b,c), 0-010(a,b), and 0-033(a)," dated June 2002 (Reference 6). Eight indoor air samples were collected inside the Knights of Columbus Hall, as well as a background air sample, and analyzed for volatile organic compounds (VOCs) using U.S. Environmental Protection Agency method TO-14. No VOCs were detected in the background sample (detection limit of 1 part per billion by volume [ppbv]). Toluene and 1,3-xylene were detected in five samples each; no other VOCs were detected (detection limit 1 ppbv). Detected toluene concentrations ranged from 1.18 ppbv to 2.26 ppbv (4.44 µg/m^3 to 8.51 µg/m^3) and detected 1,3-xylene concentrations ranged from 1.2 ppbv to 2.1 ppbv (5.21 µg/m^3 to 9.11 µg/m^3).

At the time the VCA was performed, NMED did not have screening levels with which to evaluate the indoor air sampling data. Since that time, risk-based target indoor air concentration and vapor intrusion screening levels have been developed and published in NMED's soil screening guidance for human health risk assessments. The NMED residential indoor air target concentration for toluene (5210 µg/m^3) was 612 times the maximum toluene concentration and the NMED residential indoor air target concentration for 1,3-xylene (104 µg/m^3) was 11 times the maximum 1,3-xylene concentration. Detection limits for non-detected VOCs were below NMED residential indoor air target levels. The indoor air samples were collected before the VCA, and post-VCA air concentrations should be lower. Based on the indoor air sampling, vapor intrusion does not pose an unacceptable risk.

Based on the results of the approved VCA report and NOD response, the evaluation of 1,2,4-trimethylbenze and 1,3,5-trimethylbenzene concentrations presented above, and the results of the indoor air sampling, AOC 00-027 poses no unacceptable human-health risk under the industrial and construction worker scenarios and no unacceptable risk to ecological receptors. The approved VCA addendum shows AOC 00-027 poses a potential unacceptable human-health noncarcinogenic risk under the residential scenario. Therefore, site controls to prevent future residential land use are necessary at this site. This control is currently met through Los Alamos County's zoning of the site (Zoning District C-3 – Heavy Commercial District), which does not permit residential use.

If you have any questions, please contact Christian Maupin at (505) 695-4281 (christian.maupin@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

ARTURO DURAN

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Arturo Q. Duran
Compliance and Permitting Manager
U.S Department of Energy
Environmental Management
Los Alamos Field Office

cc (letter emailed):
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