



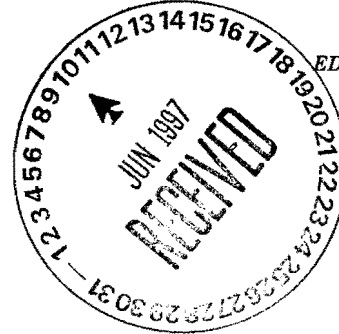
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HSWA SNL 1304

9 June 1997

Beth Oms, POC
US Department of Energy
Kirtland Area Office
P.O. Box 5400
Albuquerque, New Mexico 87185-5400

Re: DOE Oversight Bureau comments on OU 1306, Results of the Technical Areas III and V RCRA Facility Investigation (June 1996)

Dear Ms. Oms:

Enclosed are the DOE Oversight Bureau's comments concerning the above referenced document. This information is provided as technical comment, not the regulatory position of the New Mexico Environment Department.

Please contact me at 505-845-4103 if you have any questions.

Sincerely,

W. J. Stone

William J. Stone, Ph.D.
Acting POC, SNL/TRI

WJS:WSM:wsm

enclosure

cc: John Parker, NMED, Chief, DOE OB
Benito Garcia, NMED, Chief, HRMB
Warren Cox, SNL, ER Project Manager, 6681
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DOE Oversight Bureau comments on

**OU 1306, Results of the Technical Areas III and V RCRA Facility Investigation
(June 1996)**

The DOE Oversight Bureau (DOE OB) is unable to complete a detailed review of Sandia National Laboratories' (SNL's) NFA proposals until the NMED approves SNL's background levels of naturally-occurring inorganic constituents of concern (COC's). Therefore, these comments on COC's are based upon SNL's investigations thus far. The DOE OB will waive comment on results of radioactive-isotope analyses for which there are no maximum contaminant limits (MCL's); however, general comments are offered on the investigative methods used and exceedences of regulatory MCL's (e.g., gross α and gross β).

GENERAL COMMENTS

A number of comments apply to more than one site, so to avoid repetition are stated separately.

1. Table 2-6, page 2-16, shows upper limits for Ba, Cr, and Ag which are higher than those proposed in SNL's Background Study report. SNL should provide an explanation of why the upper limits are higher.
2. Appendix B, C, and D (on disk) do not contain the full data set. SNL should explain why and how the full data set was queried to create the abbreviated data files. The complete data set should be referenced and made available upon request.
3. Throughout the approved RFI Work Plan, Sandia committed to conducting additional interviews with current or former employees who may have historical knowledge of site operations. However, the RFI Report does not mention whether these interviews were conducted. Sandia should describe the results of any interviews that were conducted during the investigation.
4. The aerial photographs reviewed during the RFI were dated from 1973 to 1990. Are any older aerial photographs available?
5. Sandia continues to use analysis for TPH instead of analyses for specific constituents, such as benzene, toluene, and ethylbenzene. Sandia should use EPA Methods 8240, 8020, and unmodified 8015.
6. Ground-water data exist from SNL monitoring wells located in and near TA-III and TA-V. Steady and sporadic detections of TCE, elevated nitrate, toluene, total chrome and other contaminants have been documented in some of these wells. These well locations can potentially serve as up gradient or as down-gradient wells. SNL should include a summary table of these monitoring wells/results and a map of well locations in the RFI report.

7. At all sites having oil-contaminated soils (e.g., ER Site 18), soils with TPH exceeding 100 ppm should be excavated and treated/disposed of, according to NMED regulations.

8. At this time, SNL has drilled a background well southwest of TA-V, a potentially down-gradient well north of TA-V, and another well west of the abandoned KAFB-10 production well. The wells southwest and north of the technical area should be useful for establishing background conditions and in characterizing the solvent and NO₃ plumes underlying parts of TA-V, respectively. The well west of KAFB-10 is considered by DOE OB to be of limited value. DOE OB recommends replacing KAFB-10 with a monitoring well to evaluate the potential contribution of ER Site 36 (and/or other ER sites) to the TA-III & V ground-water contamination problem.

9. In the RFI Workplan, Comment Responses March 1993, general comment 3 of the NOD states that

“Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) “clean” samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent.”

Following the guidelines above, SNL should obtain subsurface samples where results from surface sampling exceed proposed UTL's or 95th percentiles. These results should be compared to approved UTL's or 95th percentiles to determine the vertical extent of contamination.

SPECIFIC COMMENTS

ER Site 18: Concrete Pad

ER Site 18, constructed in 1979, comprises a concrete storage pad at the south end of the Short Sled Track. Storage of sled-track materials may have resulted in contamination of soils around the pad with high-explosive (HE) residues, cadmium (Cd), chromium (Cr), zinc (Zn), depleted uranium (DU), and transformer oil and/or polychlorinated byphenols (PCB's).

Comments on ER Site 18

Table 3-5, Comparison of Site 18 Surface Soil Results to Technical Areas III and V Background Data

10. Cd, Cr, copper (Cu), lead (Pb), nickel (Ni) and Zn were all found above the proposed background UTL's or 95th percentiles (see General Comment 9).

11. The upper limit shown in Table 3-5 for Ni (12.9 mg/Kg) does not match the upper limit shown in Table 2-6 (81.3 mg/Kg); nor do either of these numbers match the UTL or 95th percentile proposed for Ni by SNL in the Background Study report. SNL should explain these discrepancies.

ER Site 34: Centrifuge Oil Spill

ER Site 34 comprises the 90-ft-diameter area beneath the outdoor centrifuge. Reportedly, repeated oil leaks spilled onto the concrete floor beneath the centrifuge drive unit and into a french drain in the floor. The french drain opens directly into the soil column. The potential COC is mineral oil.

Comments on ER Site 34

6.2 Field Investigation Results

12. Subsection 6.2.2, Nature and Extent of Contamination, page 6-4, states that

“Results of the soil sampling indicate that TPH was not present in any borehole in excess of the MDL (Table 6-1; Appendix C).”

TPH data are not listed in Appendix C. Please explain the reason for this. In addition, please refer to General Comment 2.

ER Site 35: Vibration Facility Oil Spill

ER Site 35 is a 20-ft-x-50-ft area on which an unknown volume of mineral oil and sorbent material (clay) was deposited. Potential COC is mineral-based hydraulic fluid.

Comments on ER Site 35

Figure 7-3. ER Site 35 Extent of Total Petroleum Hydrocarbon in Soil and Appendix B

13. It is unclear whether results for sample 35-R7, 1.0 ft, were non detect (Figure 7-3) or if it has a concentration of 190 mg/kg (Appendix B). In addition, two concentrations are listed for sample 35-SS-01: 5.71 mg/kg (Figure 7-3) and 5710 mg/kg (Appendix B). These discrepancies should be resolved.

ER Site 37: PROTO Oil Spill

ER Site 37 comprises seven 25,000-gal UST's containing transformer oil from which there have been documented and undocumented spills over the life of operations at the facility -- 1978 to 1989. Potential COC's are mineral oil, VOC's, and PCB's.

Comments on ER Site 37

14. Site 37 may be similar to Site 36 (HERMES Oil Spill) where VOC contamination did not begin to appear in the soil until a depth of 25 to 75 ft was reached and then increased to a depth of approximately 200 ft, possibly because of backfilling, leveling, etc. Also, VOC's may be present, as at ER Site 36, where SNL has suggested (p. 8-13)

“The origin of most of the VOC's is postulated to be bacterial fermentation of the mineral oil.”

For these reasons, deeper subsurface samples should be collected for VOC and SVOC analysis at both Sites 37 and 155 (Proto UST Site). Besides defining the extent of contamination at Site 37, these samples may provide information of value to the ground-water investigation beneath TA-5.

Site 51: Building 6924 Pad, Tank, and Pit

ER Site 51 comprises the building pad, 2,000-gal metal tank, and overflow pit that service Building 6924. The facility was used from 1969 to 1971 to synthesize HE and for rocket propellant research. Unidentified solvents contaminated with HE were discharged from the building into a concrete drainage ditch and metal tank, where they were burned. Reportedly, the pit never received any overflow.

Comments on ER Site 51

This site may be appropriate for NFA.

ER Site 78: Gas Cylinder Disposal Pit

Reportedly dug in 1963, ER Site 78 is a pit of unknown dimensions; however, the VCM excavation measured 80 ft by 180 ft in area and was 10 ft deep. Use of ER Site 78 has been varied: surface disposal of HE; pit-disposal of chromium, rubidium, thorium, lithium hydride, and other unidentified reactive metals; pit-disposal of gas cylinders containing a variety of gases, toxic materials, and unknown materials; and disposal of picric acid.

Comments on ER Site 78

15. Arsenic (As) and Cr were found in the surface verification samples above the TA III & V background UTL or 95th percentile. However, the sample taken at a depth of 5 ft within the same borehole showed As and Cr below background (see General Comment 9).

ER Site 100: Building 6620 HE Drain/Sump

ER Site 100 reportedly comprises a drain line and drain field servicing Building 6620 where assembly/disassembly of HE tests occurred. COC's are HE, VOC's, and SVOC's.

Comments on ER Site 100

14.2 Field Investigation Results

16. Subsection 14.2.2 Excavation Results, page 14-4, states that

"The reconnaissance survey conducted during preliminary site scoping activities did not reveal any evidence of the drain in the northeast corner of building 6620...."

Whereas, in the *RFI Workplan, Comment Responses March 1993*, the response to comment 1, Section 16.0, Site 100, SNL stated that

"...an attempt will be made to remove a portion of the black tile in the static-free room to confirm or deny the presence of the floor drain...."

SNL should discuss whether an attempt was made during the reconnaissance survey to remove black tile to search for the floor drain. NFA may be appropriate at Site 35, if SNL can document that reasonable efforts were made to locate the floor drain system and that no floor drain system exists.

ER Site 102: Radioactive Disposal Area

NFA may be appropriate for Site 102.

ER Site 105: Mercury Spill At Building 6536

No comment (NFA previously approved by EPA).

ER Site 188: Building 6597 Above-Ground Spill Containment Tank

No comment (NFA previously approved by EPA).

ER Site 195: Experimental Test Pit

No comment (NFA previously approved by EPA).

ER Site 196: Building 6597 Cistern

Building 6597 cistern is basically a 25-ft diameter by 20-ft deep concrete tank, mounted flush with the surface, used to temporarily store waste transformer oil from the PROTO I facility. COC's are transformer oil, Pb, VOC's, SVOC's, and PCB's.

Comments on ER Site 196

21.2 Field Investigation Results

17. Subsection 21.2.2, Nature and extent of contamination, page 21-6 states that

“The vertical extent of TPH contamination was not adequately determined in Boreholes D1 or D2.”

Total depth for boreholes D1 and D2 was 13 and 12 ft, respectively. TPH concentration was found to be 4,300 ppm at the bottom of D1 and 40,000 ppm at the bottom of D2. In both boreholes, the concentration was increasing downward. Additional sampling and analysis for TPH, VOC's, and SVOC's may be necessary to define the extent of the waste-oil plume and locate potential VOCs. As potential sources of ground-water contamination, the oil-saturated sludge and soil should be removed and disposed of appropriately.

18. Site 196 may be similar to Site 36 (HERMES Oil Spill), where VOC contamination did not begin to appear in the soil above a depth of 25 to 75 ft but increased below that to a depth of approximately 200 ft. At the HERMES site, SNL (page 8-13) has suggested that the mineral oil may be a source of secondary contamination:

“The origin of most of the VOC's is postulated to be bacterial fermentation of the mineral oil.”

For these reasons, deeper subsurface samples should be collected for VOC and SVOC analysis at Sites 196. Besides defining the extent of primary and secondary contamination at Site 196, these samples may provide information of value to the ground-water investigation beneath TA-5.

ER Site 241: Storage Yard

ER Site 241 comprises a scrap storage yard in the southeast part of TA-III. COC's are radioisotopes, HE, Pb, Be, Li, Nb, Hg, PCB's, and asbestos.

Comments on ER Site 241

Table 23-3. Comparison of Site 241 Surface Soil Results to Technical Areas III and V Background Data

19. Cu, Pb and Zn were found above the proposed TA III & V background UTL or 95th percentile. Cu was found to be above proposed background in only one sample (the Cu content of the duplicate of this sample was below background value). Appendix C lists three Pb and four Zn results that were above proposed background (see General Comment 9).

Additional soil samples may be needed at Site 241 to characterize the extent of any Cu, Pb and Zn contamination. A comparison of the maximum concentrations to RCRA Subpart S residential and industrial levels may be needed.