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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 18, 1997

Mr. Michael J. Zamorski
Acting Area Manager
Kirtland Area Office
U.S. Department of Energy
P. O. Box 5400
Albuquerque, NM 87185-5400

Dear Mr. Zamorski:

RE: Request for Supplemental Information: Sandia National Laboratory's RCRA Facility Investigation Work Plan for Operable Unit 1333, Canyons Test Area, Volumes I and II, September 1995

The New Mexico Environment Department (NMED) Hazardous and Radioactive Materials Bureau (HRMB) has reviewed the captioned Sandia National Laboratory (SNL) RCRA Facility Investigation Work Plan for Operable Unit (OU) 1333. HRMB hereby requests supplemental information on the Work Plan. General and specific questions and comments are contained in Attachment A. SNL must respond to the request for supplemental information noted in Attachment A within thirty (30) calendar days of receipt of this letter.

OU 1333 includes Environmental Restoration (ER) Sites 10, 12A-B, 13, 59, 60, 63A-B, 64, 65A-E, 72, 81A-F, 92, 93A-C, 94A-G and Site 225. ER Site 225 was removed from DOE/SNL's HSWA Module in December, 1996. ER Site 94C was scheduled to complete Decommission and Demolition activities in January, 1997. SNL has already proposed that ER Sites 59, 63A-B, 64, 72, 92, and 93A-C be designated as suitable for No Further Action (NFA). These latter sites have been or will be addressed in separate HRMB letters concerning SNL's "2nd round" and "3rd round" NFA proposals; no additional comments concerning these sites will be made here.

HRMB will not finalize active ER sites or inactive ER sites which are co-located with active sites. Active ER Sites in OU 1333 are 81 (excluding inactive site 81-C), 92 and 94. ER Sites 65 and 13 are inactive sites which are co-located with active sites.

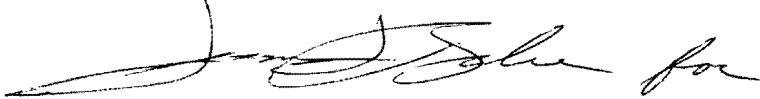
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If there are any questions, please contact me or Ms. Stephanie Kruse, HRMB's SNL Facility Manager at 827-1561.

Sincerely,



Robert S. (Stu) Dinwiddie, Ph.D., Manager
RCRA Permits Management Program

RSD/mjc

Enclosure

cc w/Enclosure:

Benito Garcia, Chief, HRMB
Stephanie Kruse, HRMB
John Parker, Chief, DOE OB
Roger Kennett, DOE Oversight Bureau
Warren Cox, SNL, Manager, ER Project
Mark Jackson, DOE
David Neleigh, EPA 6PD-N

File: HSWA, SNL, OU 1333, 97

Track: SNL, 8/18/97, DOE/KAO, HRMB/mjc, RE:, File

ATTACHMENT A

REQUEST FOR SUPPLEMENTAL INFORMATION: SNL RFI Work Plan for Operable Unit 1333, Canyons Test Area

General Comments

1. A 1994 storm water sample collected 0.4 miles west (downstream) of ER Site 65 (storm water sample station AC#6, sample number 17292) indicated elevated levels of $U^{233/234}$, U^{238} , Th^{230} , Th^{232} , Sr^{90} , tetryl and 2,4,6-TNT. The Total Suspended Solids (TSS) of 25,700 mg/L found in the sample suggests that the elevated radionuclide and high explosive levels may be in part due to uncontrolled erosion of potentially contaminated surface soils at ER Site 65.

Erosion at ER Site 65 should be controlled through the implementation and maintenance of Best Management Practices (BMPs). A storm water Sampling and Analysis Plan should be developed that will demonstrate and verify a reduction in contaminant loading to Lurance Arroyo by ER Site 65.

- 2a. HRMB requests that all references be fully cited.
- 2b. No project schedule was submitted with this RFI Work Plan. SNL shall submit a schedule for completion of this RFI.
3. By itself, field screening for volatile organic compounds (VOC's) is not adequate for the purpose of site characterization. Soil samples should be analyzed for VOC's in the laboratory using EPA method 8240 or equivalent. This comment applies to ER Sites 12A, 12B, 65C, 81A, 81B, 81C, 94C, 94D, 94E, and 94F.
4. Likewise, soil samples should be analyzed for gross alpha, gross beta, and gamma spectra in a laboratory. It is not clear if SNL intended to do these analyses using their own SMO laboratory, some other laboratory, or by using some unspecified field method. This comment applies to ER Sites 12A, 12B, 13, 65A, 65C, 65D, 65E, 81A, 81B, 81C, 81D, 81E, 81F, 94C, 94D, 94E, and 94F.
5. Detected contaminants in wastewater stored in the above-ground tanks at the Burn Site occur at concentrations which may or may not significantly impact soils. However, these concentrations are high enough that the wastewaters represent a threat to ground water.

At least one ground-water monitor well should be drilled at the Burn Site which can provide for investigation of several ER sites, as well as for future environmental surveillance. This well should be placed at a location approximately 1000 feet west of the oil surface impoundment (just west of where the Burn Site access road crosses the main arroyo of Lurance Canyon). The width of the canyon decreases markedly in this general area because of bedrock exposures. A well placed at this location should be able to detect any contaminants in ground water that may be migrating from ER Sites 12B, 13, and 94 D-F.

6. The number of site background samples proposed in the plan is probably inadequate to make reasonable statistical inferences about any of the various constituents. Concentrations of inorganic constituents should be compared to sitewide background levels to determine if contamination is present. This comment applies to ER Sites 12A, 12B, 13, 65A, 65C, 65D, 65E, 81A, 81B, 81C, 81D, 81E, 81F, 94A, 94B, 94C, 94D, 94E, 94F, and 94G.
7. Soil samples should be collected beneath the following units after their future demolition: Large Open Burn Pool, the Small Open Burn Pool, the LAARC Unit, the Bomb Burner Unit, the SWISH Unit, the SMERF, and Bunker 9830. The samples should be analyzed for appropriate constituents of concern.
8. At least one ground-water monitor well should be installed approximately 500 feet north of ER Site 81 to monitor for potential releases.
9. Active sites, such as ER Sites 81A, 81B, 81D, 81E, 81F, 94A, and 94G may require further sampling before an NFA determination can be made. SNL must provide the estimated date of decommissioning for these sites. The sites must undergo a complete investigation within 2 years after site decommissioning.
10. A minimum of 20% of all on-site laboratory analyses should be confirmed using off-site laboratory analysis until such time as SNL has submitted and received approval/concurrence from NMED for 100% use of its on-site laboratory. Specifically, SNL should submit information to describe, at a minimum, the following items:
 - a. laboratory quality control (laboratory blanks, standards, spikes, and duplicates);
 - b. sampling handling procedures (parameters, EPA test methods, container types, recommended quantities, preservatives,

- holding times, etc.);
- c. documentation procedures (for sample collection and analysis, recordkeeping);
 - d. quality assessment procedures (field audits, laboratory audits, data audits, who performs the audit, frequency of audits, etc.);
 - e. chain of custody guidelines;
 - f. data validation procedures.

SPECIFIC COMMENTS

ER Site 10, Burial Mounds

1. ER Site 10 was not addressed by the work plan, other than stating that confirmatory sampling and a Voluntary Corrective Measure (VCM) will be conducted at the site.

Depending on analytical results for ER Site 60, it may be necessary to also sample soils for explosives at ER Site 10, which surrounds the bunker.

ER Site 12A, Burial Site/Open Dump: Open Arroyo

1. Additional information, if any, regarding the contents of the 8 to 10 drums should be provided to HRMB.
2. Page 5-61, Section 5.2.6.3, Site Background Samples:

SNL states that 10 background samples will be collected. However, Figure 5-12 shows a total of 11 locations for background samples (six sediment and five soil).

3. SNL proposes three grab-sample locations for ER Site 12A, spaced about 75 ft apart. HRMB believes that at least four sample locations along the arroyo are needed to determine if a release has occurred. One of these sample locations should be at the former storage area of the 8-10 drums. The other three sample locations should be in the arroyo channel, equally spaced across the site.

Additional judgmental samples should be collected at any locations showing evidence of potential contamination.

ER Site 12B, Burial Site/Open Dump: Buried Debris

1. Page 5-61, Section 5.2.6.3, Site Background Samples:

See ER Site 12A comment #2.

2. Page 5-63, Soil-Gas Survey and Surface Soil Sampling:

The proposed soil-gas survey should be done to field screen for VOC "hot spots". However, the assumption that all of the potential waste stream types are co-located is not justified. A soil-gas survey is of limited or no value for locating areas contaminated with semi-volatile organics (SVOC's), high explosives (HE), radioactive waste, or metals.

The location of waste buried in the dump should be determined by more extensive trenching than that proposed in the work plan. Unless historical photographs can be used to constrain possible waste locations, a trench should be dug along the centerline of the entire length of the buried arroyo channel. Because of the uncertainty of where wastes may have been disposed of along the channel, additional trenches should be dug perpendicular to the centerline trench at locations to be jointly determined in the field by SNL and New Mexico Environment Department personnel. All trenches should be dug through the fill to depths sufficient to reach original ground. If the soil-gas survey shows that VOC's are present at other locations, these areas should also be excavated.

Any solid waste or radioactive waste encountered during the trenching operations should be removed and disposed of in accordance with applicable RCRA requirements.

3. Once waste areas are delineated and the wastes removed, sediments underlying such waste should be sampled. Samples should be collected at locations spaced no further than 25 feet apart. The samples should be analyzed for VOC's, SVOC's, metals, HE, gross alpha, gross beta, and gamma spectra. Additionally, soils not associated with waste materials, but nonetheless suspected to be contaminated (for example, based on field screening or discoloration), should also be sampled and analyzed for the above constituents.

If no wastes or suspected contaminated soils are encountered at the site, five sediment samples should be collected along the bottom of the centerline trench for confirmation purposes. These should be spaced at approximately equal intervals across the site.

5. If the "surface soil" at the dump area represents fill material that has been borrowed from elsewhere, then it may

not be necessary to analyze it for anything other than radiochemical constituents.

ER Site 13, Oil Surface Impoundment

1. Page 5-140, Section 5.4.1.3, last paragraph:

The waste-water samples from the above-ground tanks may not represent a worst-case scenario for metals and VOC's. Volatiles will be lost and metals may plate/settle out between tests. SNL must revise this language accordingly.

2. Depending on the analytical results from sampling the surface impoundment, the corrugated metal pipe drainline may need to be excavated and removed. If so, additional samples will need to be collected beneath the drainline. Any sludge that may be present in the drainline should also be sampled and analyzed for the same constituents as those proposed for the surface impoundment.

However, because it no longer serves a purpose, HRMB recommends that the drainline be removed, regardless of the analytical results for the surface impoundment.

ER Site 60, Bunker Area

1. ER Site 60 was not addressed by the work plan, other than stating that confirmatory sampling and a Voluntary Corrective Measure (VCM) will be conducted at the site.

ER Site 65A, Lurance Canyon Explosive Test Site, Small Debris Mound

1. Unless field evidence suggests otherwise, the number of samples planned for this site can probably be reduced.

ER Site 65B, Lurance Canyon Explosive Test Site, Primary Detonation Area

1. Any contamination at this site is expected to occur mostly at the surface that was present at the time of the testing activities. Given that ER Site 65B has been graded since becoming inactive, why were sample depths of 0-6" and 6-12" chosen? Does the current graded surface of the site represent a cut or fill area?

Deeper samples should be collected if the site has been filled to a depth greater than 12".

2. If any "ground-zero" (open-detonation) or burn-pit locations are known, they should be targeted for sampling.

ER Site 65C, Lurance Canyon Explosive Test Site, Secondary Detonation Area

1. The proposed soil-gas survey (Grid #2) can be used to field screen for VOC "hot spots". However, the assumption that all of the potential waste stream types are co-located is not justified. Additionally, a soil-gas survey is of limited or no value for locating areas contaminated with semi-volatile organics (SVOC's).
2. Because of the size of the site (about 100 x 200 feet), the number of soil sampling locations should be expanded to at least 10. This includes the number of soil borings. If any "ground-zero" or burn locations are known, they should be targeted for sampling.
3. SNL must clarify what was used to make the ammonium-nitrate slurry.

ER Site 65D, Lurance Canyon Explosive Test Site, Near Field Dispersion Area

1. Any contamination at this site most likely occurred at the surface present at the time of the testing activities. Given that ER Site 65D has been graded since becoming inactive, why were sample depths of 0-6" and 6-12" chosen? Does the current graded surface of the site represent a cut or fill area?

Deeper samples should be collected if the site occupies a fill area and the depth of the fill exceeds 12".

ER Site 65E, Lurance Canyon Explosive Test Site, Far Field Dispersion Area

1. See general comments #1, 4, and 6.

ER Site 81A, New Area Cable Site, Catcher Box/Sled Track

1. The number of sample locations should be increased from 8 to 16 for the sled track/catcher box.
2. The number of samples collected at Gun Sites #1, 2, and 3 should be increased from 1 to 4 at each location. Samples should be collected along each side of the individual gun locations.

ER Site 81B, New Area Cable Site, Pad

1. Samples in the impact-pad area should also be collected at a depth of 6-12".
2. The number of samples collected at Gun Sites #4 and #5 should be increased from 1 to 4 at each location. Samples should be collected along each side of the individual gun locations.
3. Sediment samples (at 6-12" depth) from the main arroyo channel of Sol se Mete Canyon should also be analyzed for VOC's.

ER Site 81C, New Area Cable Site, Former Burial Location

1. SNL must provide evidence that wastes were buried only in the area encompassed by ER Site 81C.

Both sides of the sled track may contain buried wastes, as suggested by observations during a 1992 site tour by NMED personnel. Trenching should be conducted on the north side of the sled track to ensure that all potential burial locations have been found.

2. The proposed sampling depths of 0-6" and 6-12" may not be adequate. Trenches should be dug across the entire site (and the north side of sled track) to look for any buried wastes. Any solid waste or radioactive waste encountered during the trenching operations should be removed and disposed of in accordance with applicable RCRA requirements.

Once waste areas are delineated and the wastes removed, sediments underlying such waste should be sampled. Samples should be collected at locations spaced no further than 25 feet apart. The samples should be analyzed for VOC's, SVOC's, metals, HE, gross alpha, gross beta, and gamma spectra. Additionally, soils not associated with waste materials, but nonetheless suspected to be contaminated (for example based on field screening or discoloration), should also be sampled for the above constituents.

If no wastes or suspected contaminated soils are encountered at the site during trenching, the seven sediment samples should be collected as planned for confirmation purposes.

3. SNL must explain the rationale for the 2 judgmental sample locations.

ER Site 81D, New Area Cable Site, Northern Cable Area

1. The number of sample locations should be increased from 5 to 20. Samples should be analyzed for HE, metals, gross alpha, gross beta, and gamma spectra.
2. Samples should also be collected at a depth of 6-12" at each location and analyzed for the above constituents.

ER Site 81E, New Area Cable Site, Gun Impact Area

1. See general comment #8.

ER Site 81F, New Area Cable Site, Scrap Yard

1. The number of sample locations for Grid #1 should be increased from 1 to 8. All samples should be analyzed for VOC's, SVOC's, HE, metals, gross alpha, gross beta, and gamma spectra.
2. The number of sample locations for Grid #2 should be increased from 2 to 9. All samples should be analyzed for VOC's, SVOC's, HE, metals, gross alpha, gross beta, and gamma spectra.
3. The number of sample locations for Grid #3 should be increased from 2 to 16. All samples should be analyzed for VOC's, SVOC's, HE, metals, gross alpha, gross beta, and gamma spectra.

ER Site 94A, Lurance Canyon Burn Site, Above-Ground Tanks

1. The site of the 70-gallon surface spill at the LOBP JP-4 tank should be sampled and analyzed for SVOC's.
2. All samples should be analyzed for SVOC's in the laboratory. This is not clear in the work plan, which states that "soil-gas samples" will be analyzed.
3. Samples should be collected at a depth of approximately 12".

ER Site 94B, Lurance Canyon Burn Site, Debris/Soil Mound Area

1. All debris should be removed.

2. The beta/gamma radiological anomalies should be characterized, and the sources removed if necessary to protect human health and the environment.
3. Some judgmental samples should be collected in the channel of the main drainage crossing the site.

ER Site 94C, Lurance Canyon Burn Site, Bomb Burner Area and Discharge Line

1. In addition to the constituents listed in Table 5-25, all samples at this site should be analyzed for VOC's and SVOC's.
2. The corrugated metal pipe drainline should be excavated and removed. Several samples should be collected beneath the drainline. If any sludge is present in the drainline, it should also be sampled.

ER Site 94D, Lurance Canyon Burn Site, Bomb Burner Discharge Pit

1. The proposed borehole should be advanced to a minimum depth of 15 feet. Samples should be collected at 5-foot intervals (starting at the surface) and analyzed for VOC's, SVOC's, HE, and metals.

ER Site 94E, Lurance Canyon Burn Site, Small Surface Impoundment

1. The impoundment currently receives storm-water runoff which could drive contaminants downward. The proposed borehole should be advanced to a minimum depth of 25 feet. Samples should be collected at 5-foot intervals (starting at the surface) and analyzed for VOC's, SVOC's, HE, and metals.
2. The manhole should be investigated to determine its purpose. This may require some excavation of it and its connecting piping. Additional sampling may be needed at this site, depending on the purpose of the manhole.

ER Site 94F, Lurance Canyon Burn Site, LAARC Discharge Pit

1. Because of the uniform nature of the waste stream, the "grid samples" may not be necessary.
2. The borehole should be advanced to a minimum depth of 15 feet. Samples should be collected at 5-foot intervals (starting at the surface) and analyzed for VOC's, SVOC's, and metals.

ER Site 94G, Lurance Canyon Burn Site, Scrap Yard

1. See general comment #8.

ER Site 225, AEC Storage Facility/KAFB

ER Site 25 is a Kirtland Air Force Base ER site, and was removed from SNL's RCRA Permit in December, 1996.