

TA-35



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Risk Reduction & Environmental Stewardship (RRES)
Groundwater Protection Program (GPP), MS M992
Los Alamos, New Mexico 87545
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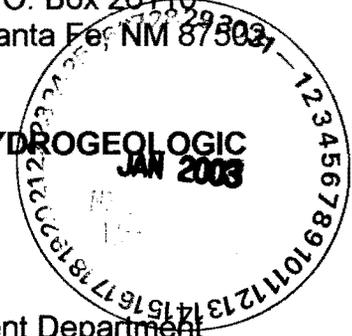


National Nuclear Security Administration
Los Alamos Area Office, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-7203/FAX (505) 665-4504

Date: January 22, 2003
Refer to: RRES-GPP:03-006

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

Butch Tongate
Bureau Chief
NMED-Solid Waste Bureau
P.O. Box 26110
Santa Fe, NM 87502



**SUBJECT: MANAGEMENT OF DRILL CUTTINGS FROM HYDROGEOLOGIC
WORKPLAN WELLS (R-WELLS)**

Dear Messrs. Young and Tongate:

The purpose of this letter is to inform the New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB) and Solid Waste Bureau (NMED-SWB) that the Los Alamos National Laboratory (LANL) will use the cuttings from the drilling of regional aquifer wells for restoration of the drilling site upon completion of drilling activities. The decision to use the cuttings for this purpose is supported by the information included below.

LANL will remove the drill pit liner and leave the cuttings in place as fill for the drill pit upon completion of drilling activities. The drill pits will then be filled to ground level with original site material. The sites will be revegetated and appropriate Best Management Practices will be put in place to prevent erosion. This practice has been used successfully at LANL at all previous regional well drill sites. Unlike previous wells, however, R-Wells 14, 16, 20, 23 and 32 were drilled using drilling fluids, and residuals remain in the cuttings. The attachment to this letter includes data demonstrating that the residuals in the cuttings do not constitute a waste management concern.

Management of the cuttings as part of site restoration is appropriate because the analytical results for the cuttings are consistent with that of purged water being discharged to the ground, per the conditions of Notices of Intent (NOIs) approved by the NMED-Groundwater Bureau (GWB) for R-Wells 14, 16, 20, 23, and 32. The analytes detected in wet cuttings from R-Wells 14 and 32, the minimum, maximum, and mean values, soil geochemical background values, screening levels, and TCLP regulatory limits are shown in the attachment. The screening levels are from "NMED Soil Screening Levels," Revision 1.0, December 18, 2000, with the exception of acetone, 4-methyl-2-pentanone, n-propylbenzene, and 1,2,4-trimethylbenzene, which are Environmental Protection Agency (EPA) screening levels. ESLs are from the ECORISK database, version 1-5, September 2002. Analytes are compared to background values, where available. If background values are unavailable,



analytes are compared to the screening levels. The comparison of mean values of analytical results for the cuttings to screening levels illustrates that concentrations are well below the appropriate human health or ecological screening level.

The wet cuttings from R-Wells 14 and 32 were analyzed for radionuclides, organics, high explosives, PCBs, total inorganics, and TCLP inorganics. Of the radionuclides analyzed, only tritium was higher than background, but it did not exceed the screening level. No organics exceeded the screening levels, and no high explosives or PCBs were detected. Of the inorganics analyzed, only magnesium, nickel, and sodium, were higher than background. Of these inorganics, screening levels exist for iron and nickel, and they were not exceeded. The TCLP analytical results indicate that there are no hazardous characteristic waste issues associated with the metals present in the cuttings. The TCLP analytical results for metals shown in the attachment do not approach any of the TCLP regulatory limits. Based on these results, LANL believes that use of the cuttings on site is an acceptable management practice and that the cuttings do not warrant off-site disposal as a solid/industrial waste.

Based on the concentrations and potential sources of organics in the cuttings, LANL believes there are no hazardous waste issues associated with the organics present. The organic compound detected at the highest level in the wet cuttings was acetone, which is often a false positive for isopropyl alcohol, a major constituent of Quik Foam. The presence of acetone as a false positive for isopropyl alcohol has been identified in several characterization wells where Quik Foam has been used.

The data provided for R-Wells 14 and 32 are representative of cuttings data from the other three wells, R-16, 20, and 23. Data for cuttings from those wells will be provided when available, which is anticipated to be in late January 2003. In addition to the five wells included in this request, LANL wishes to establish the use of drill cuttings for site restoration as an accepted management practice for all future R-Well drilling projects, provided that the analytical results for the cuttings remain consistent with the results presented in this request.

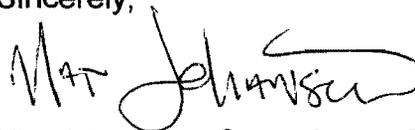
LANL believes that managing the drill cuttings on site would allow for site restoration that is both protective of human health and the environment and cost effective. LANL will begin site restoration activities by the end of this month, so please contact us by January 31, 2003 if you have concerns; otherwise, we will proceed with management of the cuttings as described herein. If you have any questions, please contact myself at (505) 665-4681 or Mat Johansen at (505) 665-5046.

Sincerely,



Charles Nylander, Program Manager
Groundwater Protection Program
Los Alamos National Laboratory

Sincerely,



Mat Johansen, Groundwater Program
Program Compliance Manager
National Nuclear Security Admin.
Office of Los Alamos Site Operations

CN/MJ/kmv/th

Enclosure: Attachment – Analytes Detected in Wet Cuttings for Regional Wells R-14
and 32

Cy (w/enc.):

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J. Parker, NMED-OB
S. Yanicak, NMED-DOE OB, MS J993
L. King, EPA Region 6 (2 copies)
RRES-GPP File, MS M992
RRES-RPF, MS M992 (ER2003-0050)

Attachment

Analytes Detected in Wet Cuttings for Wells (R-14, R-32)

Detected Analyte	Minimum Value	Maximum Value	Mean Value	Soil Geochemical Background Value	Screening Action Levels	Ecological Screening Levels	TCLP Regulatory Limit
Radionuclides (pCi/g):							
Am-241 (alpha spec)	0	0	0	0.013	NA	NA	NA
Cs-137 (gamma spec)	0	0	0	1.65	NA	NA	NA
Pu-238 (alpha spec)	0	0	0	0.023	NA	NA	NA
Pu-239 (alpha spec)	0	0	0	0.054	NA	NA	NA
Sr-90 (proportional counting)	0	0	0	1.31	NA	NA	NA
Tritium (liquid scintillation)	0.035	31.860	10.6	0.17 (Qbt 3)*	890	36,000	NA
Th-232 (gamma spec)	0	1.25	0.417	2.33	NA	NA	NA
U-234 (alpha spec)	1.10	1.28	1.19	2.59	NA	NA	NA
U-235 (alpha spec)	0	0.073	0.037	0.2	NA	NA	NA
U-238 (alpha spec)	1.13	1.23	1.19	2.29	NA	NA	NA
Organics (EPA 8260-B & 8270-C, mg/kg):							
Acetone (isopropyl alcohol)	2.9	17.6	14.7	Unavailable	1,600	3.8	NA
Benzene	0	0.010	0.002	Unavailable	6.4	55	0.5 mg/L
Bromomethane	0	0.620	0.160	Unavailable	3.7	NA	NA
Chloroform	0	0.0078	0.0018	Unavailable	0.38	28	6 mg/L
Chloromethane	0	0.0079	0.0026	Unavailable	12.0	NA	NA
Ethylbenzene	0	0.015	0.003	Unavailable	68	NA	NA
4-Methyl-2-pentanone	0	0.033	0.007	Unavailable	790	NA	NA
Methylene chloride	0	0.710	0.182	Unavailable	8.9	7.1	NA
n-Propylbenzene	0	0.0065	0.001	Unavailable	140	NA	NA
Toluene	0	0.510	0.138	Unavailable	180	70	NA
1,2,4-Trimethylbenzene	0	0.038	0.008	Unavailable	52	NA	NA
Xylenes (total)	0	0.064	0.013	Unavailable	63	5.4	NA
High Explosives (EPA 8330, mg/kg):							
No compounds were detected.							
PCBs (EPA 8082, mg/kg):							
No compounds were detected.							
Total Inorganics (EPA 6010-B, mg/kg):							
Aluminum	1.93	9,670	3,228	29,200	NA	NA	NA
Antimony	0	0.068	0.023	0.83	NA	NA	NA
Arsenic	0.005	1.57	0.528	8.17	NA	NA	NA
Barium	0.018	61.3	20.5	295	NA	NA	NA
Beryllium	0	0.333	0.111	1.83	NA	NA	NA
Cadmium	0	0.285	0.095	0.40	NA	NA	NA
Calcium	45.2	9,370	3,392	6,120	NA	NA	NA
Chromium	0.0034	29.7	10.2	19.3	NA	NA	NA
Cobalt	0	15.9	5.3	8.64	NA	NA	NA
Copper	0.008	24.3	8.1	14.7	NA	NA	NA
Iron	0	28,170	9,390	21,500	23,000	NA	NA
Lead	0	2.69	0.898	22.3	NA	NA	NA
Magnesium	0.08	14,390	4,800	4,610	NA	NA	NA
Manganese	0	501	167.3	671	NA	NA	NA
Mercury	0	0.0011	0.0004	0.1	NA	NA	NA
Nickel	0.004	48.1	16.0	15.4	1,500	NA	NA
Potassium	37.3	733	390.8	3,460	NA	NA	NA
Selenium	0	1.75	0.59	1.52	NA	NA	NA
Silver	0	0.084	0.028	1	NA	NA	NA
Sodium	227	2,620	1,260	915	NA	NA	NA
Thallium	0	0.107	0.036	0.73	NA	NA	NA
Vanadium	0	54.8	18.3	39.6	NA	NA	NA
Zinc	0	42	14.0	48.8	NA	NA	NA
TCLP Inorganics (EPA 1311/6010-B, mg/L):							
Arsenic	0	0	0	NA	NA	NA	5
Barium	0.152	0.241		NA	NA	NA	100
Cadmium	0	0	0	NA	NA	NA	1
Chromium	0	0.0169		NA	NA	NA	5
Lead	0	0.003		NA	NA	NA	5
Mercury	0	0	0	NA	NA	NA	0.2
Selenium	0	0	0	NA	NA	NA	1
Silver	0	0	0	NA	NA	NA	5

* Background value is calculated from Bandelier Tuff unit 3 (Qbt 3) value of 0.3 pCi/mL at 18.5% moisture concentration.