TA-00

Department of Energy

National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

MAR 2 2 2004

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED-Hazardous Waste Bureau
2905 Rodeo Park Drive E, Bldg 1
Santa Fe, NM 87502

Ms. Cindy Padilla, Bureau Chief
NMED-Solid Waste Bureau
P.O. Box 26110
Santa Fe, NM 87505

Dear Mr. Young and Ms. Padilla:

Subject: Management of Drill Cuttings from Regional Aquifer Wells R-2, R-4, R-11, & R-26

The purpose of this letter is to inform the New Mexico Environmental Department Hazardous Waste Bureau (NMED-HWB) and Solid Waste Bureau (NMED-SWB) that the Department of Energy (DOE) will use the cuttings from the drilling of the regional aquifer wells R-2, R-4, R-11, and R-26 for restoration of the drilling sites consistent with the requirements outlined in the Stormwater Pollution Prevention Plan for each site. We plan to use the same approach that was set forth in a previous letter sent to NMED on January 22, 2003 for previously constructed wells (reference RRES-GPP:03-006). The use of the cuttings for this purpose is supported by the information included in the attached letter that summarizes the data from analysis of the cuttings analyses and compares the data to background and screening levels.

The cuttings from wells R-2, R-4, R-11 and R-26 were analyzed for radionuclidies, organics, high explosives, PCBs, total inorganics and TCLP inorganics and compared against established background levels for Los Alamos National Laboratory (LANL) (Ryti Report, 1998) and NMED Soil Screening Levels (December 18, 2000 Revision 1.0). In summary, no constituents were detected above NMED Soil Screening Levels (SSLs).

None of the analyzed radionuclide concentrations were higher than background levels. No high explosives or PCBs were detected. Lead, mercury, and selenium were slightly higher than the averaged background levels for LANL but were well below the SSLs. The detection of these metals slightly above background levels is likely due to variability in the background concentrations at different locations at LANL. Calcium was detected above background in the cuttings from well R-2. Its presence is most likely due to the cement grout mixed in with the drill cuttings. All of the inorganic TCLP data were all non-detect for all constituents in all cuttings samples. Di-n-butyl-phthalate was detected

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in the cuttings from wells R-2 and R-26 but at levels far below the NMED SSLs. The presence of this constituent is most likely due to the weathering of the plastic pit liner and/or the use of latex gloves by samplers. The liner will be removed during site restoration. Very low levels of several PAHs were detected in the cuttings from well R-11. The levels detected were also well below the NMED SSLs. The source of these compounds is most likely from runoff of rainwater and snowmelt from the nearby asphalt roadway. Based on these analytical results, DOE believes that use of the cuttings on-site is an acceptable management practice.

At each site, the drill pit liner will be removed and cuttings left in place as fill for the drill pit. The cuttings will not be moved off-site. The pits will then be filled to ground level with original site fill material and the site re-graded to meet pre-construction topography and grade. Finally, The drill sites will be re-vegetated with an appropriate seed mix and erosion will be controlled utilizing Best Management Practices while the sites recover.

The drilling contractor will begin site restoration activities starting in April 2004. If there are concerns or questions, please contact us by March 31, 2004, otherwise we will proceed with cuttings disposal as outline above. If you have any questions, I can be reached at (505) 665-5046 or Tom Whitacre at (505) 665-5042.

Sincerely,

Mat Johansen

Mat Johansen
Groundwater Program Manager

OPM:1TW-003

Enclosure

cc:
T. Whitacre, OPM, LASO
C. Nylander, RRES, LANL, MS-M992

MAR 2 2 2004

Duratek™

March 17, 2004

Mr. Tom Whitacre
Project Manager
DOE - Los Alamos Site Office

Subject: Waste Determination for Drill Cuttings From Hydrogeologic Work Plan Wells R-2, R-4, R-11, and R-26

Dear Mr. Whitacre:

Duratek Federal Services, Inc. (DFSI) has performed a review of the analytical results of the drill cuttings from the Hydrogeologic Work Plan Wells R-2, R-4, R-11, and R-26 for a waste determination. The concentrations of detected constituents in the cuttings are below regulatory action levels, however, a few constituent concentrations are slightly higher than soil geochemical background values (Ryti, 9/22/98), but lower than soil screening levels (SSL) from the New Mexico Environment Department (NMED) Soil Screening Levels, Revision 1, December 18, 2000 (ER ID # 68554). Calcium and selenium at R-2, mercury at R-4, and lead at R-26 are slightly elevated above background, details are explained below. The use of the drill cuttings for site restoration fill material at each well location is an appropriate option assuming the NMED concurs with the use of drill cuttings as site restoration fill material as set forth in the January 22, 2003 letter to NMED (reference: RRES-GPP:03-006) from Charles Nylander and Mat Johansen.

DFSI's data review consisted of comparing R-2, R-4, R-11, and R-26 cuttings analytical data to the maximum values for R-14 and R-32 cuttings data attached to the January 22, 2003 letter to NMED. Industry standard 2-sigma bounding method was used to define the statistical range of the maximum values for R-14 and R-32. The R-2, R-4, R-11, and R-26 drill cuttings data was evaluated against the maximum values ± 2-sigma, and all were within the bounding scenario or less than background with the exception of calcium (29,300 mg/kg,) and selenium (1.6 mg/kg) at R-2, mercury (0.16 mg/kg) at R-4, and lead (38 mg/kg) at R-26. DFSI considers all the cuttings analytical results to be consistent with the results NMED accepted in the January 22, 2003 letter assuming some flexibility in the background values.

The following table presents analytes detected in soil cuttings from wells R-2, R-4, R-11, and R-26 compared to background and NMED SSL values.

R-11
The R-11 data indicates no constituents above background. Five organic constituents were detected below NMED SSLs: 1,2-dichloroethane (0.068 mg/kg), benzo(b) fluoranthene (0.31 mg/kg), fluoranthene (0.37 mg/kg), phenanthrene (0.27 mg/kg), and pyrene (0.42 mg/kg).

R-26
The R-26 data indicates a di-n-butyl-phthalate detection of 0.25 mg/kg with a NMED SSL of 6100 mg/kg. The latex gloves are the most obvious source of di-n-butyl-phthalate. Lead is detected at 38 mg/kg total, with a background value of 22.3 mg/kg total lead and TCLP lead is non-detect.

The cuttings from R-2, R-4, R-11, and R-26 were analyzed for radionuclides, organics, high explosives, PCBs, total inorganics, and TCLP inorganics. Of the radionuclides analyzed, none were higher than background. Organic concentrations detected were lower than NMED SSLs. Di-n-butyl-phthalate was detected, however, the most obvious source is the plastic pit liner and/or latex gloves worn during sampling activities. No high explosives or PCBs were detected. Of the inorganics analyzed, only calcium, lead, mercury, and selenium were higher than background but lower than the NMED SSLs. The calcium source is likely to be from the cement used for well head construction and the concentration would be reduced or become undetectable when spread on site. The TCLP analytical results indicate that there are no hazardous characteristic waste issues associated with lead, mercury, or selenium present in the cuttings. Based on these results DFSI believes that use of the cuttings on site is an acceptable management practice and the cuttings do not warrant off-site disposal as a solid/industrial waste.

Sincerely,

Thomas A. Benson, Project Manager
Duratek Federal Services, Inc.

Sincerely,

Andrew E. Drom, General Manager
Duratek Federal Services, Inc.

Analytes Detected in Wet Cuttings for Wells (R-2, R-4, R-11, R-26)

Detected Analyte	Maximum Value (mg/kg)	Soil Geochemical Background Value (mg/kg)	NMED Soil Screening Level (mg/kg)
Organics (EPA 8260-B, 8270-D)			
1,2-Dichloroethane	0.068	NA	3.3
Di-n-butyl-phthalate	0.37	NA	6100
Benzo(b) fluoranthene	0.31	NA	6.2
Fluoranthene	0.37	NA	2300
Phenanthrene	0.27	NA	1800
Pyrene	0.42	NA	1800
Total Inorganics (EPA 6010, 3050 ICP SCAN, 7471 CVAA)			
Calcium	29,300	6120	NA
Lead	38	22.3	400
Mercury	0.16	0.1	6.5
Selenium	1.68	1.53	380

R-2

The R-2 data indicates a di-n-butyl-phthalate detection of 0.37 mg/kg with a NMED SSL of 6100 mg/kg. Di-n-butyl-phthalate is present in latex, and latex gloves were worn by the field personnel during sample collection activities which explains the detection of di-n-butyl-phthalate. Calcium is detected at 29,300 mg/kg with a background value of 6120 mg/kg, this can be explained considering the concrete well head construction and the potential for some cement to be mixed into the cuttings during the site activities. Selenium is detected at 1.68 mg/kg total with a background value of 1.53 mg/kg total selenium total, but TCLP selenium is non-detect.

R-4

The R-4 data indicates a mercury detection of 0.161mg/kg total, with a background value of 0.1 mg/kg total mercury and TCLP mercury non-detect.