Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE: April 11, 1994
IN REPLY REFER TO: EM/ER:94-A127
MAIL STOP: M992
TELEPHONE: (505) 665-2613

2110
TA-2

Ms. Barbara Driscoll
Environmental Protection Agency
Region 6
1445 Ross Avenue
Suite 1200
Dallas, TX 75202-2733

Dear Ms. Driscoll:

This letter is to inform you of the upcoming drilling and sampling event that affects the Resource Conservation and Recovery Act Facility Investigation (RFI) work being performed in Operable Unit (OU) 1098 at Los Alamos National Laboratory.

Operable Unit 1098 incorporates Technical Areas (TAs) 2 and 41 in Los Alamos Canyon. The purpose of this field work is the Phase I Hydrogeologic/Geochemical Baseline Characterization and will include the drilling, sampling, and installation of six shallow groundwater monitoring wells in the shallow alluvial aquifer of the canyon. This work was outlined in the RFI work plan for OU 1098 which has been approved by your office. Attached is Figure 1 showing the locations of the six groundwater monitoring wells to be installed. Also attached is a sampling analysis summary table, and a table including the analytical suite of potential contaminants of concern and their associated analytical method.

Drilling and sampling should start approximately April 25 and last three to four weeks. We will keep you and/or your designated sampler apprised of the progress should you desire to split samples for this event with us.

Please feel free to call me with any questions regarding this sampling program.

Sincerely,

Tracy Glatzmaier
Programmatic Project Leader

TG/sg

Attachments a/s

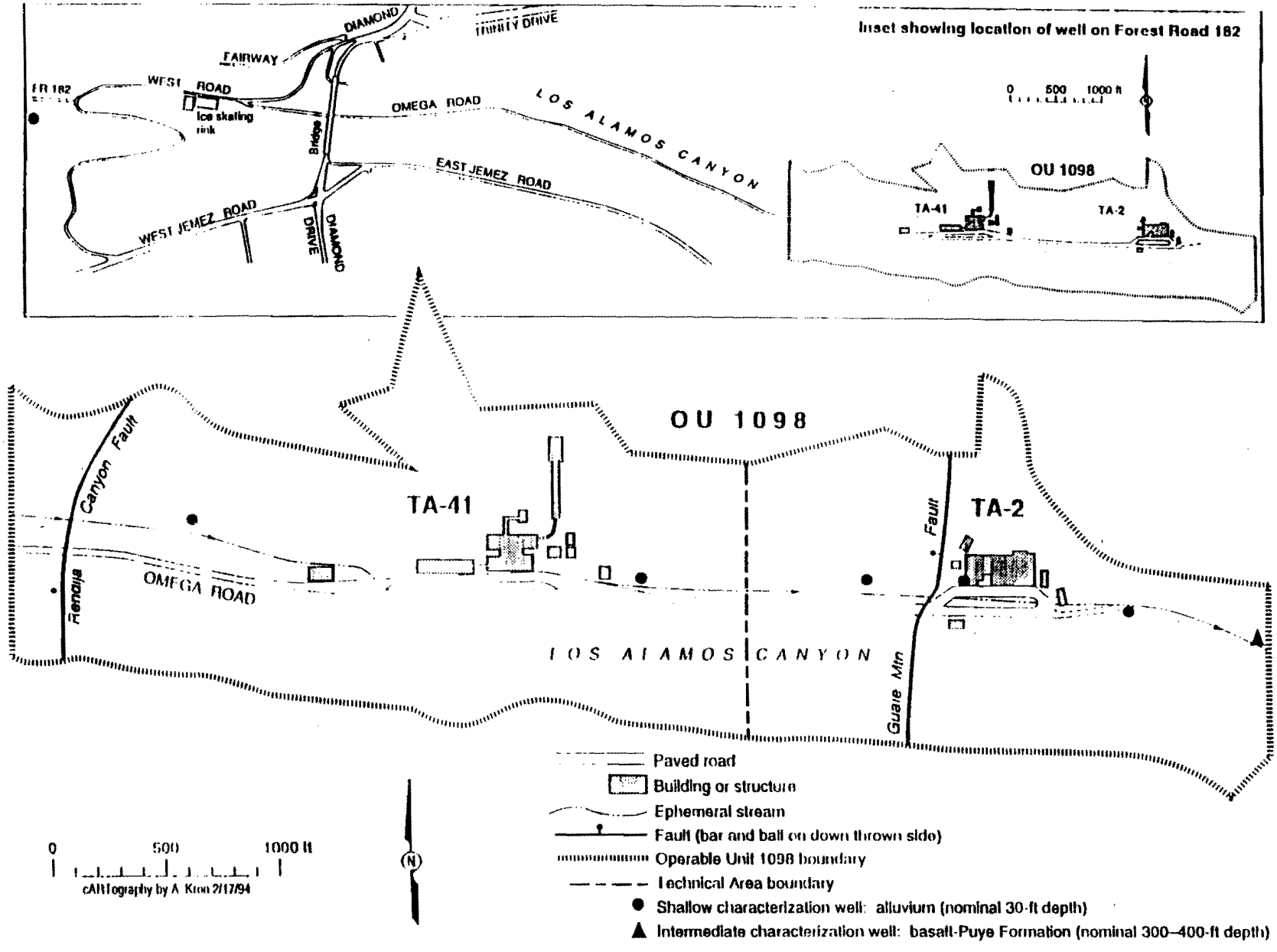
Cy: Ted Taylor DOE/LAAO, MS A316
T. Baca, EM, MS J591 (w/o att.)
J. Shipley, EM, MS J591 (w/o att.)
J. Jansen, EM/ER, MS M992 (w/o att.)

3116

Cy: (Cont'd)
D. McInroy, EM/ER, MS M992 (w/o att.)
P. Aamodt, EM/ER, MS M992 (w/o att.)
Pat Longmire, CST-10, MS J534 (w/o att.)
CRM-4, MS A150 (w/o att.)
RPF, MS M707

Bruce Swanton
DOE Oversight & Monitoring, LANL
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, NM 87503

Figur


Inset showing location of well on Forest Road 182
0 500 1000 ft
OU 1098
TA-41
TA-2
DIAMOND
FAIRWAY
TRINITY DRIVE
ER 182
WEST
ROAD
Ice skating rink
Bridge
OMEGA ROAD
LOS ALAMOS CANYON
EAST JEMEZ ROAD
WEST JEMEZ ROAD
DIAMOND DRIVE
Canyon Fault
Fault
Guaje Mtn
Paved road
Building or structure
Ephemeral stream
Fault (bar and ball on down thrown side)
Operable Unit 1098 boundary
Technical Area boundary
Shallow characterization well: alluvium (nominal 30-ft depth)
Intermediate characterization well: basalt-Puye Formation (nominal 300–400-ft depth)
0 500 1000 ft
cAIRtography by A. Kron 2/17/94
N

Sampling Analysis Summary
OU 1098 TA-2 and TA-41

Number of Samples by Analysis	RADVAN Screen(Gross Alpha/Beta and Gamma; Gamma Spec.; Tritium)	Radiochemistry(Cs-137; Sr-90; Te-99; Isotopic Plutonium and Isotopic Uranium; Cobalt-60)	Tritium(Dilution and Liquid Scintillation)	Volatile Organic Compounds (8240)	Semi-Volatile Organic Compounds and PCBs (8270)	Organochlorine Pesticides	Inorganics 6010 (see list 1) and 7470	ASTM Soil Classification, Bulk Density, Porosity (total and effective), Total Organic Carbon, Permeability or Hydraulic Conductivity, Mineralogical Composition, & Kd (distribution coefficient)
SOIL	30	30	30	30	30	30	30	6*
DUPLICATE (soil)	2	2	2	2	2	2	2	N/A
Container Specifics								
Volume	8oz (sandwich bag)	8oz CWM	250 ml	2 x 40 ml	250 ml	250 ml	125 ml	3 kg
Material	ZIPLOCK Bags	Glass	Plastic	Glass	Glass	Glass	Plastic	ZIPLOCK BAGS
Preservative	Cool	N/A	N/A	Cool	Cool	Cool	Cool	N/A
Holding Time	N/A	N/A	N/A	14 days	7days to extract; 40days to analysis (after extract)	7days to extract; 40days to analysis (after extract)	N/A	N/A
TOTAL NUMBER OF CONTAINERS	32	32	32	32	32	32	32	6
FIELD BLANK (aqueous)	N/A	2	2	2	2	2	2	N/A
RINSE BLANK (aqueous)	N/A	2	2	2	2	2	2	N/A
TRIP BLANK (aqueous)	N/A	N/A	N/A	6	N/A	N/A	N/A	N/A
Container Specifics								
Volume	N/A	3x1L	1L	3x40ml	2x1L	2.5L A.J.	500ml	N/A
Material	N/A	Plastic	Glass	Glass, Teflon Septa	Glass	Glass	Plastic or Glass	N/A
Preservative	N/A	Cool; HNO3 to pH < 2	Cool	Cool; HCl to pH < 2	Cool	Cool	Cool; HNO3 to pH < 2	N/A
Holding Time	N/A	no limit	no limit	14days	7days to extract; 40days to analysis (after extract)	7days to extract; 40days to analysis (after extract)	6 months	N/A
TOTAL NUMBER OF CONTAINERS	N/A	4	4	10	4	4	4	N/A

* One sample per borehole will be collected and divided into two aliquots. One aliquot will be analyzed for Mineralogical Composition and Kd, the other for ASTM Soil Classification, Bulk Density, Porosity, Organic Carbon, and Permeability.

Number of Samples by Analysis	Chloride; Sulfide; Fluoride; Chlorate; Silica; Boron; Bromide	Nitrate; Nitrite	Phosphate; Ammonia; Dissolved Organic Carbon	Metals (inc. Uranium)	Radium226; Thorium230; Cesium137; Strontium90; Isotopic Uranium and Plutonium	Volatile Organics	Semi-Volatile Organics	Tritium	Cyanide	Hydrogen/Deuterium; Oxygen16/Oxygen18
LIQUID	6	6	6	6	6	6	6	6	6	6
DUPLICATE (aqueous)	1	1	1	1	1	1	1	1	1	1
FIELD BLANK (aqueous)	1	1	1	1	1	1	1	1	1	1
RINSE BLANK (aqueous)	1	1	1	1	1	1	1	1	1	1
TRIP BLANK (aqueous)	N/A	N/A	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A
NOTE:	**sampling will be performed quarterly (3 total)**									
Container Specifics										
Volume	1L	200ml	1L	500ml	1 Gal	2x40ml	1x1L	1L	500ml	2x40ml
Material	Plastic	Plastic	Plastic or Glass	Plastic or Glass	Plastic	Glass, Teflon Septa	Glass	Glass	Plastic or Glass	Glass
Preservative	Cool	Cool; H_2SO_4 to pH<2	Cool; H_2SO_4 to pH<2	Cool; HNO_3 to pH<2	Cool; HNO_3 to pH<2	Cool; HCl to pH<2	Cool	Cool	Cool; NaOH to pH>12	None
Holding Time	28days	48hours	28days	6months	no limit	14days	7days to extract; 40days to analysis (after extract)	no limit	14days	no limit
TOTAL NUMBER OF CONTAINERS	**27**	**27**	**27**	**27**	**27**	**72**	**27**	**27**	**27**	**54**

ANALYTICAL SUITE FOR SUBSURFACE SOIL/SEDIMENT SAMPLING
AT OU 1098 IN LOS ALAMOS CANYON

Analyte	Analytical Method
Gross alpha/beta	Gas flow proportional counter
Gross gamma	Gamma spectrometry
Cesium-137	Gamma spectrometry
Strontium-90	Gas flow proportional counter
Technetium-99	Gamma spectrometry
Uranium (total)	ICP (EPA method 6010)
Plutonium (isotopic)	Radiochemical separation and alpha spectrometry
Cobalt-60	Gamma spectrometry
Americium-241	Gamma spectrometry
Tritium	Distillation and liquid scintillation
Mercury	EPA Method 7470, Cold Vapor
Inorganics* (lead, chromium, and beryllium)	EPA Method 6010, ICP
Hexavalent Chromium	SM 312b (1985)**
Semivolatile organic compounds*	EPA Method 8270
Volatile organic compounds*	EPA Method 8240
Organochlorine pesticides*	EPA Method 8080
Polychlorinated biphenyls*	EPA Method 8080

* 20 percent of subsurface soil/sediment samples will be analyzed for Appendix IX inorganics, semivolatile organic compounds, volatile organic compounds, organochlorine pesticides, and polychlorinated biphenyls.

** *Standard Methods for the Examination of Waste and Wastewater, 16th ed.; 1985.*