ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

January 12, 2005

JAN 18 2005

Mr. Scott Atwater
U.S. Nuclear Regulatory Commission
RGN-IV/DNMS/FCDB
Suite 400
611 Ryan Plaza Drive
Arlington, TX 76011

SUBJECT: ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED OCTOBER 25 AND 28, 2004 FROM RANCHO SECO - SMUD, HERALD, CALIFORNIA (INSPECTION REPORT #50-312/2004-04) [RFTA NO. 05-001]

Dear Mr. Atwater:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received eight soil samples on November 2, 2004 that were collected from October 25, 2004 through October 28, 2004 at Rancho Seco - SMUD. Four of the samples were received in Marinelli beakers and were analyzed for cobalt-60 and cesium-137 by gamma spectroscopy (GS) (Procedure CP1, Revision 14). The remaining four samples were received in scintillation vials and were analyzed for carbon-14 and tritium by liquid scintillation analysis (LSA) (Procedure AP6, Revision 14; CP4, Revision 3). The GS and LSA data are presented in Tables 1 and 2, respectively.

ESSAP's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

This letter report was delayed due to problems with the counting and processing instrumentation used in the carbon-14 and tritium analytical process. We apologize for this delay and hope that the delay has not placed an undue burden on your report process.

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 with any questions or comments.

Sincerely,

Wade P. Ivey for

Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC/WPI:ar

Enclosure

cc: T. McLaughlin, NRC/NMSS/TWFN 7F27
E. Knox-Davin, NRC/NMSS/TWFN T8A23
E. Garcia, NRC Region IV
E. Abelquist, ORISE/ESSAP
T. Vitkus, ORISE/ESSAP
File/1636

Distribution approval and concurrence:	**Initials**
Technical Management Team Member	QJB
Quality Manager	QTP

ORISE TABLE 1

SELECTED GAMMA EMITTING RADIONUCLIDE CONCENTRATIONS IN SOIL SAMPLES BY GAMMA SPECTROSCOPY PROCEDURE CP1 - REVISION 14 RANCHO SECO - SMUD 11/04 HERALD, CALIFORNIA

ESSAP Sample ID	NRC REGION IV Sample ID	Radionuclide Concentrations[a] (pCi/g)	
		Co-60	Cs-137
1636S0002	SB8120070DS01	0.04 ± 0.03[b]	0.86 ± 0.07
1636S0004	SB8120070DS05	0.02 ± 0.02	0.06 ± 0.02
1636S0006	SB8120070DS10	0.00[c] ± 0.01	0.09 ± 0.02
1636S0008	SB8120070DS14	0.01 ± 0.01	0.09 ± 0.02

[a]The average MDC for Co-60 is 0.03 pCi/g and for Cs-137 is 0.02 pCi/g.

[b]Uncertainties represent the 95% confidence level, based on total propagated uncertainties.

[c]Zero value is due to rounding.

ORISE TABLE 2

CONCENTRATIONS OF TRITIUM (H-3) AND CARBON-14 (C-14) BY LIQUID SCINTILLATION ANALYSIS PROCEDURE AP6, REVISION 14; PROCEDURE CP4, REVISION 3 RANCHO SECO - SMUD 11/04 HERALD, CALIFORNIA

ESSAP Sample ID	NRC REGION IV Sample ID	Radionuclide Concentrations[a] (pCi/g wet weight)	
		H-3	C-14
1636S0001	SB8120070DS99	43.8 ± 5.0[b]	6.5 ± 2.1
1636S0003	SB8120070DS98	80.9 ± 6.8	13.8 ± 2.3
1636S0005	SB8120070DS97	2.8 ± 3.2	5.7 ± 2.0
1636S0007	SB8120070DS96	8.0 ± 3.4	4.2 ± 2.0

[a]The average MDC for H-3 is 5.6 pCi/g wet weight and for C-14 is 3.2 pCi/g wet weight.

[b]Uncertainties represent the 95% confidence level, based on total propagated uncertainties.