ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

September 15, 2005

SEP 20 2005

Ms. Beth Schlapper
U.S. Nuclear Regulatory Commission
Region IV: DNMS: NMLB
Suite 400
611 Ryan Plaza Drive
Arlington, TX 76011

SUBJECT: ANALYTICAL RESULTS FOR TEN SOIL SAMPLES COLLECTED AUGUST 22-24, 2005 FROM KAISER ALUMINUM, TULSA, OKLAHOMA (INSPECTION REPORT #040-02377/05-005) [RFTA NO. 05-001]

Dear Ms. Schlapper:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received ten soil samples for analysis from Kaiser Aluminum, Tulsa, Oklahoma on August 26, 2005. At your request, the soil samples were analyzed as received (wet) for the thorium and uranium series by gamma spectroscopy (GS) (Procedure CP1, Revision 15). The percent moisture (Procedure SP3, Revision 4) was calculated for each of these samples. The GS and percent moisture data are presented in Table 1.

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

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

Sincerely,

Dale Condra

Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC/WPI:ar

Enclosure

cc: T. McLaughlin, NRC/NMSS/T-7E18
E. Knox-Davin, NRC/NMSS/TWFN T8A23
R. Evans, Region IV
E. Abelquist, ORISE/ESSAP
A. Boerner, ORISE/ESSAP
File 1670

Distribution approval and concurrence:	Initials
Technical Management Team Member	AB
Quality Manager	CTP

P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

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ORISE TABLE 1

CONCENTRATIONS OF SELECTED GAMMA EMITTING RADIONUCLIDES AND PERCENT MOISTURE IN SOIL SAMPLES BY SAMPLE PREPARATION SP3, REVISION 4 AND GAMMA SPECTROSCOPY CP1, REVISION 15 KAISER ALUMINUM TULSA, OKLAHOMA

ESSAP Sample ID	NRC Region IV Sample ID	Percent Moisture	Radionuclide Concentrations (pCi/g wet weight)[a]						
			U-238 by Th-234	U235	Total U[b]	Th-230	Th-228 by Pb-212	Th-232 by Ac-228	Total Th[c]
1670S0001	NRC05-05-01	9.7	0.83 ± 0.68[d]	-0.04 ± 0.13	1.62 ± 0.97	7.3 ± 6.6	1.70 ± 0.14	1.72 ± 0.28	3.42 ± 0.31
1670S0002	NRC05-05-02	26	1.4 ± 1.2	0.11 ± 0.19	2.9 ± 1.7	17 ± 10	7.08 ± 0.64	6.87 ± 0.60	13.95 ± 0.88
1670S0003	NRC05-05-03	15	0.67 ± 0.83	0.09 ± 0.22	1.4 ± 1.2	1.1 ± 7.8	5.80 ± 0.50	4.78 ± 0.50	10.58 ± 0.71
1670S0004	NRC05-05-04	27	2.6 ± 1.2	0.19 ± 0.26	5.4 ± 1.7	36 ± 14	9.56 ± 0.76	10.15 ± 0.85	19.7 ± 1.1
1670S0005	NRC05-05-05	15	1.70 ± 0.97	-0.15 ± 0.18	3.3 ± 1.4	-1.7 ± 6.1	4.20 ± 0.39	3.60 ± 0.40	7.80 ± 0.56
1670S0006	NRC05-05-06	19	0.71 ± 0.55	0.01 ± 0.10	1.43 ± 0.78	0.5 ± 3.7	0.94 ± 0.08	0.85 ± 0.15	1.79 ± 0.17
1670S0007	NRC05-05-07	11	1.13 ± 0.73	-0.04 ± 0.12	2.2 ± 1.0	-1.6 ± 4.2	0.99 ± 0.10	0.96 ± 0.18	1.95 ± 0.21
1670S0008	NRC05-05-08	16	0.64 ± 0.58	0.05 ± 0.09	1.33 ± 0.83	-2.0 ± 3.7	0.83 ± 0.08	0.85 ± 0.16	1.68 ± 0.18
1670S0009	NRC05-05-09	12	0.73 ± 0.60	0.06 ± 0.10	1.52 ± 0.85	1.0 ± 3.1	0.76 ± 0.08	0.72 ± 0.12	1.48 ± 0.14
1670S0010	NRC05-05-10	18	0.98 ± 0.69	0.09 ± 0.13	2.05 ± 0.98	-0.9 ± 4.8	1.42 ± 0.12	1.47 ± 0.24	2.89 ± 0.27

[a]The average MDCs for these radionuclides range from 0.06 pCi/g for Th-228 by Pb-212 to 8.8 pCi/g for Th-230.

[b]Total uranium is calculated using the equation (2·U-238) + U-235.

[c]Total thorium is the sum of Th-228 and Th-232.

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