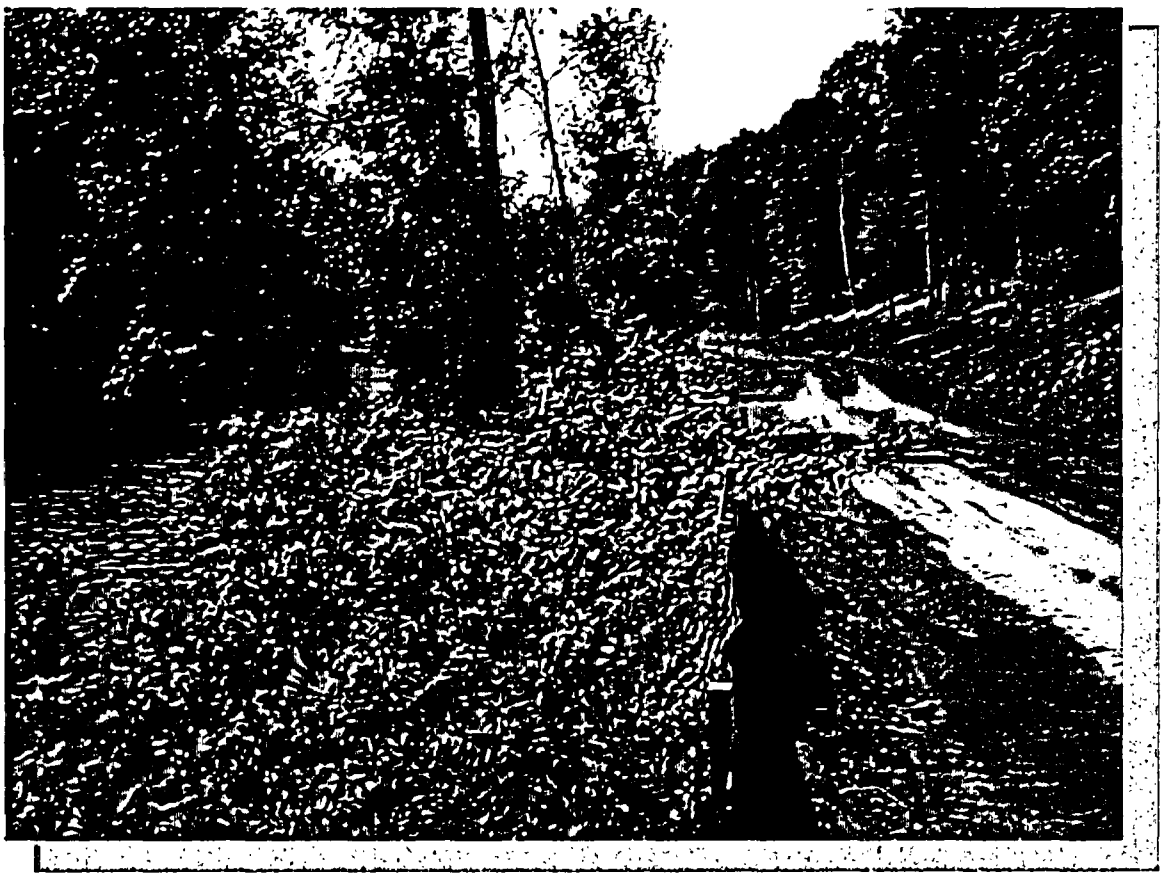

Final Status Survey Final Report Phase II

Appendix A8

Survey Unit Release Record
9528-0003, Southeast Mountain Side

February 2005

CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
SOUTHEAST MOUNTAIN SIDE
SURVEY UNIT 9528-0003

Prepared By: _____ Date: 2/18/05
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1. SURVEY UNIT DESCRIPTION

Survey Unit (SU) 9528-0003, (Southeast Mountain Side) is designated as Final Status Survey (FSS) Class 2 and consists of approximately 10,000 m^2 (2.47 acres) of open land area located about a quarter of a mile (0.23 miles) from the center of the Haddam Neck Plant (HNP) Containment Building (see Attachment 1-Figure 1). SU 9528-003 is located between the Discharge Canal on the south and approximately fifteen (15) meters into the interior of area Survey Unit 9528-0000 on the north. Prior to FSS, activities associated with the Independent Spent Fuel Storage Installation (ISFSI) road construction occurred in this area. The area topography was altered with typical road building activities such as tree and stump removal, silt control, grading and backfilling. Most of the survey unit was cleared of interfering vegetation and the Canal Road was brought to sub-grade.

The reference coordinates associated with the Southeast Mountainside survey unit are E022 through E033 by S104 through S124 (see License Termination Plan Section 5.4.3). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS).

The historic files indicate that during the survey of 9528-0000, several areas were identified along the southern border of this area that possibly contained plant related radioactive materials. Initially the area was subdivided into one survey unit, 9528-0001. This area, located along the Discharge Canal, was approximately 5.75 acres and designated Class 2. During the scoping survey of Unit 9528-0001, plant related activity was identified in a soil sample collected in an area along the Canal Road. Based on area limitations from the License Termination Plan (LTP), the decision was made to subdivide area 9528-0001, and create three (3) new survey units, 9528-0002, 0003 and 0004. FSS samples and scan data related to 9528-0000, 0002, and 0004 areas are excluded from this report.

2. CLASSIFICATION BASIS

The survey unit was classified in accordance with Procedure RPM 5.1-10, *"Survey Unit Classification"*. The historical information and scoping analyses results provide sufficient data to designate SU 9528-0003 as Class 2 in August 2001.

The *"Classification Basis Summary"* conducted for SU 9523-0000 consisted of:

a) A review of the 10CFR50.75 (g) (1) database,

b) A review of the *"Initial Characterization Report"* and *"Historic Site Assessment Supplement,"*

c) Historic and current survey records review,

d) Personal interviews,

e) Visual inspections and a "walk down."

A review of the 10CFR50.75 (g) (1) database report listed Condition Report (CR) 01-0490 in association with 9528-0003. The CR was written during the FSS of Survey Unit 9528-0000 and identifies the possibility that radioactive material(s) were deposited near this location. Although not specifically listed in the data base report, a CR listed for Survey Unit 9528-0002, CR 02-0125, further identifies plant related materials being found along the haul road in the adjacent survey unit.

A review of the *"Initial and Supplemental Characterization Reports"* as well as the previous *"Classification Basis Summaries"* provided no additional information pertinent to classification. The Classification Basis Summary dated August 13, 2001 indicated that the creation of Survey Unit 9528-0003 resulted from the decision to subdivide Class 3 Survey Area 9528-0000 following FSS activities

Samples collected during the FSS of SU 9528-0000 was used, in part, to develop the survey design of SU 9528-0003. Cesium-137 was the only identified radionuclide in the sample analysis. The levels of Cs-137 were consistent with the concentrations found in soil at offsite locations within the vicinity of the HNP as presented in Health Physics Technical Support Document (TSD) BCY-HP-0063, "*Background Cs-137 Concentration in Soil.*" The reported values of Cs-137 were not enough to warrant radiological soil remediation.

During scoping surveys of adjacent SU 9528-0002 and 9528-0004, Co-60 and Cs-137 was identified in samples collected from soil piles and excavated areas found in these survey units. This data, as well as previously collected sample data from 9528-000, were used to develop a statistical summary of the eighteen (18) samples used for the survey design of 9528-0003 (see Table 1).

Table 1 – Basis Statistical Quantities for Cesium-137 and Coblat-60 from the Characterization Survey

Parameter	Cesium-137 (pCi/g)	Cobalt-60 (pCi/g)
Minimum Value:	-0.011	-0.012
Maximum Value:	0.701	0.036
Mean:	0.262	0.012
Median:	0.267	0.010
Standard Deviation:	0.200	0.013
Measurement standard deviation of the weighted sum(1):	0.063	

(1) - MARSSIM Section I.11.3 describes the use of the measurement standard deviation of the weighted sum when measured concentrations of the various radionuclides are assumed to be uncorrelated (i.e., there is no fixed ratio between the concentrations).

Interviews with HNP health physics personnel provided no information on the cause of the apparent soil disturbance in the area.

A walkdown of the area was performed by FSS Engineers. The FSS staff noted that the survey unit contained several locations with apparent soil disturbance.

At the time of FSS, the dose impact from groundwater contamination was not considered. The classification basis shows that the expected residual radioactivity in the survey unit would be below the site remediation criteria and are consistent with procedural guidance, thereby sufficient to justify final Class 2 designation.

3. DATA QUALITY OBJECTIVES (DQO)

The primary objective of the Final Status Survey Plan (FSSP) was to demonstrate that the level of residual radioactivity in Survey Unit 9528-0003 did not exceed the release criteria specified in the LTP, was below the 10 mrem/yr Administrative Level Derived Concentration Guideline Level (DCGL), and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

FSS design and planning endorsed the use of the Data Quality Objective (DQO) process as described by the LTP, Procedure RPM 5.1-11, *"Preparation of Final Status Survey Plan,"* and the *"Multi-Agency Radiation Survey and Site Investigation Manual"* (MARSSIM). A summary of the main features of the DQO process are provided herein.

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would satisfy the release criteria objective of the FSS.

The DQO process determined that Cs-137 and Co-60 would be the radionuclides of concern during the 9528-0003 FSS process. Additionally, to provide conservatism, the Base Case DCGLs for radionuclides in soil was reduced by 60% to establish the Administrative Level DCGL. As multiple radionuclides were assumed to be present, the "unity rule" or "sum of the fractions," described by Equation 5-32 of the LTP, was used to show compliance with the release criteria.

Instrument DQOs included a verification of the ability of the survey instrument to detect the radiation(s) of interest relative to the DCGL. Survey instrument response checks were performed before issue and after the instrument had been

used. Control and accountability of survey instruments were maintained to assure the quality and prevent the loss of data.

Laboratory DQOs and analysis results were reported as actual calculated results. Results reported as less than Minimum Detectable Concentration (<MDC) would not be accepted for FSS. Sample report summaries included unique sample identification, analytical method, radionuclide, result and uncertainty of two standard deviations (2σ), laboratory data qualifiers, units and the required and observed MDC (see Table 2).

Table 2 – FSS DCGL Values and Required Minimum Detectable Concentrations

Radionuclide	Base Case Soil DCGL (pCi/g) (1)	Administrative Level DCGL (pCi/g) (2)	Required MDC (pCi/g) (3)
H-3	4.12E+02	1.65E+02	1.65E+01
C-14	5.66E+00	2.26E+00	2.26E-01
Mn-54	1.74E+01	6.96E+00	6.96E-01
Fe-55	2.74E+04	1.10E+04	1.10E+03
Co-60	3.81E+00	1.52E+00	1.52E-01
Ag-108m	7.14E+00	2.86E+00	2.86E-01
Ni-63	7.23E+02	2.89E+02	2.89E+01
Sr-90	1.55E+00	6.20E-01	6.20E-02
Nb-94	7.12E+00	2.85E+00	2.85E-01
Tc-99	1.26E+01	5.04E+00	5.04E-01
Cs-134	4.67E+00	1.87E+00	1.87E-01
Cs-137	7.91E+00	3.16E+00	3.16E-01
Eu-152	1.01E+01	4.04E+00	4.04E-01
Eu-154	9.29E+00	3.72E+00	3.72E-01
Eu-155	3.92E+02	1.57E+02	1.57E+01
Pu-238	2.96E+01	1.18E+01	1.18E+00
Pu-239/240	2.67E+01	1.07E+01	1.07E+00
Pu-241	8.70E+02	3.48E+02	3.48E+01
Am-241	2.58E+01	1.03E+01	1.03E+00
Cm-243/244	2.90E+01	1.16E+01	1.16E+00

(1) The Base Case DCGLs for soil are specified by the LTP in Chapter 6.
(2) The Administrative Level DCGL is 40% of the Base Case DCGL.
(3) The required MDC was 10% of the Administrative Level DCGL.

4. SURVEY DESIGN

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. To assist the Final Status Survey Engineers (FSSE) when preparing survey plans for FSS, guidance is provided in Procedure RPM 5.1-11. By design, the FSSP meets the ALARA criteria for soils as specified in Chapter 4 of the LTP.

The LTP specifies that scanning will be performed in a combination of systematic and judgmental measurement for a Class 2 land area and cover 10% to 100% of the area. The fraction of scanning coverage was determined during the DQO process with the total amount and location(s) based on the likelihood of finding elevated activity during FSS. Based on conditions found during the area inspection tours, three (3) areas, totaling 1,028 m^2 in area or 10.28% of the SU surface area, were selected for scanning. These locations were determined to have the highest potential for elevated activity based on process knowledge and previous sampling results. Scans were also prescribed for a one (1) meter radius around each random and biased Sample Measurement Location (SML).

Eighteen (18) data points were used to determine the radiological concentration variability in this survey unit. The population data set included data from adjacent areas collected during scoping and characterization.

Radionuclide-specific analyses of soil samples collected from this survey unit and adjacent land areas with similar history and physical characteristics have identified only a few radionuclides, principally Cs-137 and Co-60 infrequently. The data collected prior to FSS indicated that the remaining radionuclides listed in Table 2 would not be present in quantities greater than 5% of the applicable Base Case DCGL in this survey unit at the time of FSS. It was unlikely that the aggregate concentration of the remaining radionuclides would exceed 10%; therefore, only Cs-137 and Co-60 were used in the survey planning of SU 9528-0003. The use of the 5% and 10% rule is consistent with the development of surrogate ratio DCGLs as described in the LTP.

Since multiple radionuclides were assumed to be present, the "unity rule" or "sum of the fractions" was used to demonstrate compliance with the release criteria. Therefore, the Operational DCGL is considered to be "1."

Surrogate DCGLs are not required for this survey unit because of the radionuclide specific analysis and radionuclide de-selection in accordance with the 5% and 10% rule.

The Elevated Measurement Comparison (EMC) does not apply to this survey unit since discrete, elevated areas of contamination are not expected.

The Sign Test was selected as the non-parametric statistical test. The use of the Sign Test did not require the selection or use of a background reference area, which simplified survey design and implementation. This approach was conservative since it included background Cs-137 as part of the sample set.

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, *"Determination of the Number of Surface Samples for FSS."* Survey design specified fifteen (15) surface soil samples for the Sign Test non-parametric statistical testing.

For the FSS, four (4) biased soil SMLs were selected in areas indicating soil disturbance or at the discretion of the FSS Engineer. In addition, four (4)

samples were collected to the depth of the limit of soil disturbance, approximately two (2) feet, in areas where construction activities had occurred.

Although Procedure RPM 5.1-11 only specified that 5% of the samples be selected for Hard-to-Detect (HTD) analysis, two (2) soil samples or 13% were randomly selected for HTD radionuclide analysis by using the Microsoft® Excel "RANDBETWEEN" function. Each sample would be sent for a full suite analysis of the HTD radionuclides specified in the LTP, Table 2-12, "Radionuclides Potentially Present at Haddam Neck Plant."

The implementation of survey specific quality control measures as referenced by Procedure RPM 5.1-24, *"Split Sample Assessment for Final Status Survey,"* included the collection of one (1) soil sample for "split sample" analysis by the off site laboratory. This location was selected randomly using the Microsoft® Excel "RANDBETWEEN" function. The number of quality control soil samples was determined to be 6% of fifteen (15) samples, rounded up to the next whole number.

The grid pattern and locations of the soil samples were determined using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, *"Identifying and Marking Surface Sample Locations for FSS."* Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy. A systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 2 area.

Sample location and scan areas were identified using AutoCAD-Lt© a commercially available plotting software with coordinates consistent with the Connecticut State Plane System. These coordinates were integrated with a GPS to locate sample and scan locations in the field. SMLs for the design are listed with the GPS coordinates in Table 3.

Table 3 -Sample Measurement Locations (SML) with Associated GPS Coordinates.

Designation	Northing	Easting
9528-0003-001F	235806.3	670779.1
9528-0003-002F	235729.6	670911.8
9528-0003-003F	235729.6	671000.2
9528-0003-004F	235729.6	671088.7
9528-0003-005F	235653	671133
9528-0003-006F	235653	671221.4
9528-0003-007F	235653	671309.9
9528-0003-008F	235653	671398.4
9528-0003-009F	235653	671486.8
9528-0003-010F	235653	671575.3
9528-0003-011F	235653	671663.8
9528-0003-012F	235653	671752.3
9528-0003-013F	235653	671840.7
9528-0003-014F	235576.4	671442.6
9528-0003-015F	235576.4	671531.1

For this Class 2 survey unit, the "Investigation Level" for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8, "Investigation Levels."

The Lower Bound of the Gray Region (LBGR) was adjusted in accordance with Procedure RPM 5.1-11 to 0.87 to maintain the relative shift (Δ/σ) in the range of 1 and 3. In a Class 2 survey unit the median concentration is expected to be well below the LBGR, in which case a Prospective Power Curve would be unnecessary and was not generated. The mean concentrations for Co-60 and Cs-137 identified during the scoping and characterization indicate this assumption to be true.

Table 4 provides a synopsis of the survey design.

Table 4 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Survey Unit Size	10,000 m^2	Based on AutoCAD and Visual Sample Plan calculations
Number of Measurements	15	Type I (α) and Type II (β) were 0.05; relative shift (Δ/σ) set at 2 by procedure, the LBGR was 0.87.
Grid Spacing	10.75 m	Based on triangular grid
Interval Spacing	9.31 m	Based on triangular grid
DCGL	1	Based on satisfying unity rule(1)
Scan Survey Coverage	1,028m^2 (10.28%)	Based on likelihood of finding elevated readings in this particular Class 2 survey unit
Scan Investigation Level	Detectable over background	Based on achieving the Administrative Level DCGL

(1) The Operational DCGL was based on achieving an administrative level that was 40% of the soil DCGL and assuming no impact from radioactive contamination in groundwater or from buried concrete debris.

5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 24265-000-GEN-0002-00104-000. The WP&IR package included a detailed FSSP, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

Survey activities occurred July 12 through July 17, 2002.

Seven (7) scan areas were marked out using GPS coordinates consistent with the Connecticut State Plane System and scanned for elevated readings (see Attachment 2 for Scan Area Results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to the ground as possible and was moved at a scan speed of about 0.5 meters per second.

Using GPS coordinates, SMLs were identified and marked with a surveyor's flag for identification. At each SML, a one (1) meter radius around the sample flag was scanned for elevated radiation levels.

Fifteen (15) surface soil samples were collected in random locations and packaged in accordance with HNP Procedure RPM 5.1-3, *"Collection of Surface and Subsurface Soil, Shoreline Sediment, Asphalt and Liquid samples*

for Scoping, Characterization and Final Status Survey," and FSS design. Samples were controlled, transported, stored, and transferred to the off site laboratory using Chain-of-Custody (COC) protocol in accordance with Procedure RPM 5.1-5, *"Chain of Custody for Scoping, Characterization and Final Status Survey Samples."*

Two (2) samples (004F and 0019F) were randomly selected for HTD radionuclide analysis.

Four (4) biased samples were collected (016F, 017F, 018F and 019F) where construction activities had occurred or had potential to impacted local soils. With the exception of 019F, these samples were analyzed by gamma spectroscopy at the HNP.

Four (4) soil samples (002FD, 004FD, 010FD and 013FD) were taken to the depth of the limit of disturbance (2 feet) where construction activities had occurred in the survey unit. These samples were analyzed by gamma spectroscopy at the HNP.

The implementation of survey specific quality control measures included the collection of sample 010F for "split sample" analysis by the off site laboratory.

6. SURVEY RESULTS

One elevated reading was identified during scanning the SML 005F. Scan Area 1 and 2 contained areas with elevated readings, which prompted the collection of investigation samples from these areas. The investigation results are discussed in Section 8 of this report. Table 5 provides an overview of the Scan Area survey. All scan area results are provided in Attachment 2.

Table 5- Scan Area Results

Scan Area	Highest Logged Reading (cpm)	Investigation Level (MDC-cpm)	Elevated Reading Identification	Investigation Sample
1	13700	12817	ER-0001	9523-0003- 025F
	13000	12817	ER-0002	9523-0003- 027F
	12900	11962	ER-0003	9523-0003- 029F
	16100	15052	ER-0004	9523-0003- 030F
	13500	11962	ER-0005	9523-0003- 028F
	12500	12710	ER-0006	9523-0003- 031F
	14000	12817	ER-0007	9523-0003- 026F
2	12700	10622	ER-0001	9523-0003- 021F
	10700	10622	ER-0002	9523-0003- 020F
	10800	10622	ER-0003	9523-0003- 022F
	11000	10171	ER-0004	9523-0003- 024F
	11300	10171	ER-0005	9523-0003- 023F
3	9800	11062	-	-

The off site laboratory employed for the radiological analyses of samples was STL-Richland, Richland, Washington. The laboratory analyzed the fifteen (15) samples taken for non-parametric statistical testing, the associated duplicates and the biased samples using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDC. The results of gamma spectrometry analysis for a majority of the samples indicated Cs-137 at levels consistent with concentrations of Cs-137 found in soil at offsite locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063, "*Background Cs-137 Concentration in Soil.*"

The data shows that Co-60 was reported as less than 5% of the Administrative Level $DCGL_{soil}$ on all samples collected. Sample 9528-0003-005F was scanned during collection and identified as "elevated." Sample analysis did not indicate any anomalies requiring further investigation. A summary of the sample results is provided in Table 6.

Table 6- Summary of Soil Sample Results

Sample Number	Cs-137 pCi/g	C0-60 pCi/g	f-DCGL (1)
9528-0003-001F	0.009	-0.001	0.003
9528-0003-002F	0.023	0.005	0.011
9528-0003-003F	0.082	0.043	0.054
9528-0003-004F	0.562	-0.014	0.178
9528-0003-005F	0.040	0.009	0.019
9528-0003-006F	0.072	0.014	0.032
9528-0003-007F	0.015	0.015	0.015
9528-0003-008F	0.366	-0.056	0.116
9528-0003-009F	0.160	-0.028	0.051
9528-0003-010F	0.092	0.028	0.048
9528-0003-011F	-0.014	-0.009	0.000
9528-0003-012F	0.001	0.002	0.002
9528-0003-013F	-0.011	-0.029	0.000
9528-0003-014F	0.134	0.068	0.087
9528-0003-015F	0.127	-0.001	0.040

(1) f-DCGL-fraction of the Operational DCGL.

The off site laboratory processed the two (2) selected samples (004F and 019F) for HTD analysis including alpha spectroscopy, gas proportional counting and liquid scintillation depending on the radionuclide and the measurement method. Strontium-90 was the only HTD radionuclide reported at statistically significant concentrations in the two (2) samples (see Table 7). In combination with Cs-137 and Co-60, the maximum f-DCGL (0.279) in the sample set was for SML 011F. No further action or investigations were required.

Table 7-Hard-to-Detect Sample Results pCi/g

Sample	Pu-239/240	Sr-90	Fe-55	f-DCGL(1)
9528-0003-004F	0.0191	-	-	0.0017
9528-0003-019F	-	0.0470	37.8	0.079

(1) f-DCGL-fraction of the Administrative Level DCGL.

Four (4) biased samples were collected at locations where construction activities had occurred or had the potential to impacted local soils. None of the samples exceeded 20% of the Operational DCGL for Cs-137 and Co-60. With the exception of 019F, these samples were analyzed by gamma spectroscopy at the HNP. No further action or investigations were required (see Table 8).

Table 8-Biased Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	f-DCGL(1)
9528-0003-016F	0.220	0.020	0.083
9528-0003-017F	0.054	0.012	0.025
9528-0003-018F	0.006	0.013	0.010
9528-0003-019F	0.291	0.150	0.191

(1) f-DCGL-fraction of the Operational DCGL.

Samples were collected, down to a depth of two (2) feet, in areas where the soil appeared disturbed. These samples were analyzed by gamma spectroscopy at the HNP. None of the samples exceeded 4% of the Operational for Cs-137 and Co-60 (see Table 9).

Table 9-Samples Collected at Depth

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	f-DCGL(1)
9528-0003-002FD	0.099	0.010	0.038
9528-0003-004FD	0.046	0.007	0.019
9528-0003-010FD	0.093	0.008	0.035
9528-0003-013FD	-0.001	0.002	0.001

(1) f-DCGL-fraction of the Operational DCGL.

7. QUALITY CONTROL

The off site laboratory processed the split samples and performed gamma spectroscopy analysis. Six percent (6%) of the samples were selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using United States Nuclear Regulatory Commission (USNRC) acceptance criteria specified in Inspection Procedure 84750 as detailed in Procedure RPM 5.1-24, *"Split Sample Assessment for Final Status Survey."* There was acceptable agreement between field split results. The sample analysis vendor, STL-Richland, Richland, Washington, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachment 2 for data and data quality analysis results.

8. INVESTIGATIONS AND RESULTS

The FSSP was amended to include sampling where scan measurements had exceeded the investigation levels specified in the original plan. Samples 9528-0003-020F through 031F was collected to satisfy this amendment. With the exception of sample 9528-0003-023F, these samples were analyzed by gamma spectroscopy at the HNP. None of the samples exceeded 13% (0.127) of the Operational DCGL for Cs-137 and Co-60 (see Table 10).

Table 10-Investigation Samples Collected in Scan Areas

Scan Area	Sample Number	Elevated Reading	Cs-137 pCi/g	Co-60 pCi/g	f-DCGL[1]
1	9528-0003-025F	ER-0001	0.014	-0.006	0.004
	9528-0003-027F	ER-0002	0.019	-0.002	0.006
	9528-0003-029F	ER-0003	0.014	0.013	0.013
	9528-0003-030F	ER-0004	0.012	0.003	0.016
	9528-0003-028F	ER-0005	0.011	-0.008	0.004
	9528-0003-031F	ER-0006	0.013	0.019	0.017
	9528-0003-026F	ER-0007	0.138	0.011	0.051
2	9528-0003-021F	ER-0001	0.012	0.018	0.016
	9528-0003-020F	ER-0002	0.031	0.015	0.019
	9528-0003-022F	ER-0003	0.019	0.006	0.010
	9528-0003-024F	ER-0004	0.054	0.007	0.021
	9528-0003-023F	ER-0005	0.375	0.013	0.127

(1) f-DCGL-fraction of the Operational DCGL.

9. REMEDIATION AND RESULTS

Historically, no remediation was performed in this survey unit prior to or as a result of the FSS. Health Physics TSD BCY-HP-0078, "*ALARA Evaluation of Soil Remediation in Support of Final Status Survey,*" determined that remediation beyond that required to meet the release criteria to be unnecessary and that the remaining residual radioactivity in soil was ALARA.

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

The change made from the LTP, prior to this FSS, was a decrease in the concentrations for the Base Case $DCGL_{soils}$. The LTP presents DCGLs that correspond to a Total Effective Dose Equivalent (TEDE) of 25 mrem/yr. This survey unit was evaluated against Administrative Level DCGLs that correspond to 10 mrem/yr.

Sample location 9528-0003-014F was moved eighteen (18) feet from the designated location due to dense overgrowth that prohibited work in the area.

FSSP Addendum 1 and 2 were submitted to perform confirmatory sampling at several locations where scan measurements have exceeded the investigation level specified plan (SML 020F to 031F).

FSSP Addendum 3 was submitted to provide DCGLs as specified in Revision #1 to the LTP. The submitted revision to the LTP included changes to DCGL values for soil, some of which are slightly different than those provided in the FSSP. The decision statement and detection sensitivity are both dependent on the correct value for DCGL. These DCGLs and MDC values have been modified to meet a 10 mrem/yr release criterion as shown in Table 2.

11. DATA QUALITY ASSESSMENT (DQA)

The DQO sample design and data were reviewed in accordance with Procedure RPM 5.1-23, *"Data Quality Assessment,"* for completeness and consistency. The sampling design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. All sample results were less than the release criteria. Therefore, the Sign Test shows that the survey unit passes FSS.

Documentation was complete and legible. Surveys and sample collection were consistent with the DQOs and were sufficient to ensure that the survey unit was properly designated as Class 3.

The preliminary data review consisted of converting the data into units relative to the release criteria (i.e., pCi/g) and calculating basic statistical quantities (e.g., mean, median, standard deviation).

The FSS mean values for Cs-137 and Co-60 were well below those used for survey design; whereas, standard deviations were almost equal to the values used for design, thus representing expected variability. This type of survey optimization was expected since data from previous surveys in the area were used to obtain survey-planning parameters.

The Cs-137 range of the data is about 3.5 standard deviations. The difference between the mean and median was 24% of the standard deviation. The histogram of the data indicates it is skewed positive. Two (2) samples are displayed as "outliers" in this sample set, indicating that another distribution may exist. These outliers are near or below 10% of the Administrative DCGL value for Cs-137. Survey Unit 9528-0003 was excavated for construction in the past and the graphical presentation of the data may represent this event.

The Co-60 range of the data is about 2.2 standard deviations. The difference between the mean and median was 4.6% of the standard deviation. The histogram of the data indicates it is slightly skewed positive. All sample results are well below 10% of the Administrative Level DCGL value for Co-60. Survey Unit 9528-0003 was excavated for construction in the past and the graphical presentation of the data may represent this event.

All data, assessments and graphical representations are provided in Attachment 2.

12. ANOMALIES

All data is considered valid including negative values, zeros, values reported below the MDC and values reported with uncertainties greater than two standard deviations (2σ). Some radionuclides have been reported at low concentrations that are statistically significant at the 95% confidence level, but with a relatively high level of uncertainty.

Gamma spectroscopy results identified several radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). Cesium-134 and Am-241 were frequently identified in sample results. The offsite laboratory data qualifier unit shows that these radionuclides were analyzed for and the result was less than the MDC. These very low-level "detections" may be attributed to false positive noise at the lower limit of the measuring technique.

Two (2) samples were submitted to the offsite laboratory and analyzed for HTD radionuclides. The analysis indicates that Sr-90 was the only identified radionuclide in the samples meeting the criteria for acceptance. Typically, the levels and geographical locations of the Sr-90, along with Cs-137, found in the analysis are associated with weapons testing and atmospheric fallout. The amounts identified in the report suggest that this is the origin of the Sr-90 along with certain amounts of Cs-137. The Sr-90 value compares favorably with research conducted in other regional areas concerning fallout resultant from nuclear testing in the past as referenced in EPRI Technical Report 1003030, *"Determining Background Radiation Levels in Support of Decommissioning Nuclear Power Plants."*

Plutonium was detected in one (1) of the HTD samples but below the criteria for identification. The likely source of Pu-239/240 is the release of plutonium from past atmospheric nuclear weapons testing and burn-up and vaporization of the United States SNAP 17A satellite in the atmosphere given the extremely low levels reported.

These HTD radionuclides do not represent quantities that would increase the requisite number of samples for non-parametric statistical sampling or cause the survey unit to fail to meet the release criteria. Sample analysis did not indicate any anomalies requiring further investigation. The analytical data shows that all the identified HTD radionuclides were reported as a small fraction of the corresponding soil DCGL. Most radionuclides were reported at levels well below the required MDC. All were reported below the desired MDC, that is, less than 10% of the soil DCGL.

During the survey of Scan Area 1, an outcropping of rock was identified as containing naturally occurring radioactive materials. Initial survey with the Eberline E-600 using a SPA-3 sodium iodide detector gave a reading of 35,000 cpm. Geological occurrences of this type are discussed in the Health Physics

TSD CY-HP-0150, *"Investigation of Rock Outcropping Exhibiting Elevated Activity."*

13. CONCLUSION

Survey Unit 9528-0003 has met the DQOs of the FSS. For this survey unit, the ALARA criteria for soils as specified in Section 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

The sample data passed the Sign Test. The null hypothesis was rejected. Evaluation of the data shows that none of the FSS design radionuclides or HTD soil concentration values exceeded the Operational DCGL or unity. No large anomalies were observed in the graphical representation of the data. The survey unit was properly designated as Class 2. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved.

This survey unit was evaluated for the potential impact by radioactive contamination in groundwater based on location, topography and current hydro-geologic sampling data as referenced in Health Physics TSD CY-HP-0193, *"Assessment of Existing Groundwater Dose for Phase II Release Areas of the Final Status Survey Report."*

For SU 9528-0003, the highest existing groundwater dose within the zone of influence is the January 2002 Sr-90 sample results for Supply Well B (1.02 pCi/l). Tritium (H-3) was not detected in the sample and therefore no dose due to H-3 need be included. Using the LTP 25 mrem/yr DCGL for Sr-90 of 251 pCi/l for Sr-90, the calculated dose would be 0.102 mrem/yr. As this is approximately 0.4% of the 25 mrem/yr DCGL, consistent with the LTP this dose is not required to be included in showing compliance with site unrestricted release criteria.

14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Sample and Statistical Data

Attachment 1
Figures
(5 pages)

Attachment 2
Sample and Statistical Data

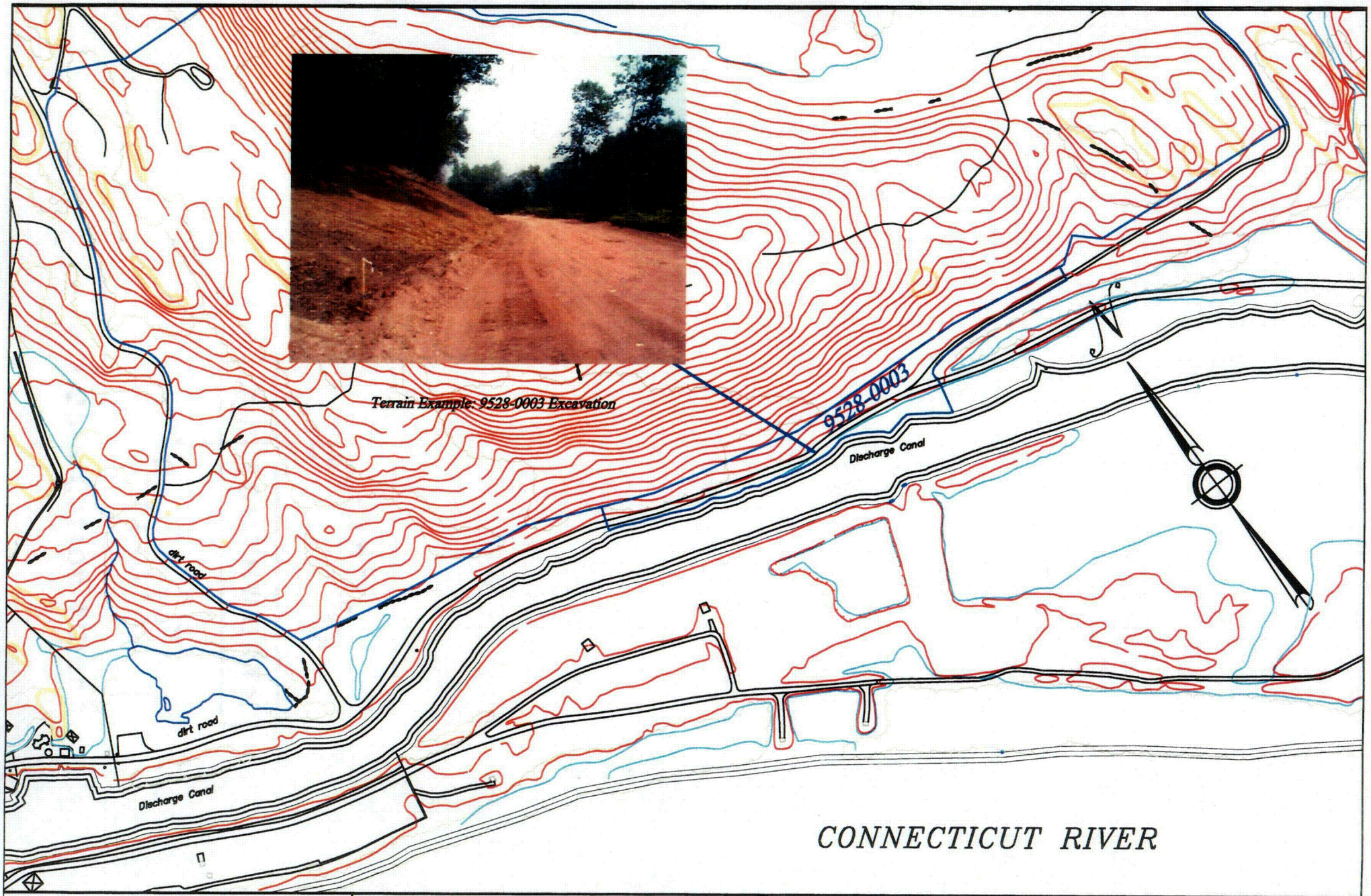


Figure 1	Connecticut Yankee Atomic Power Company Site Map With Reference To Survey Unit 9528-0003	Date	Rev
		April 2004	0

C01

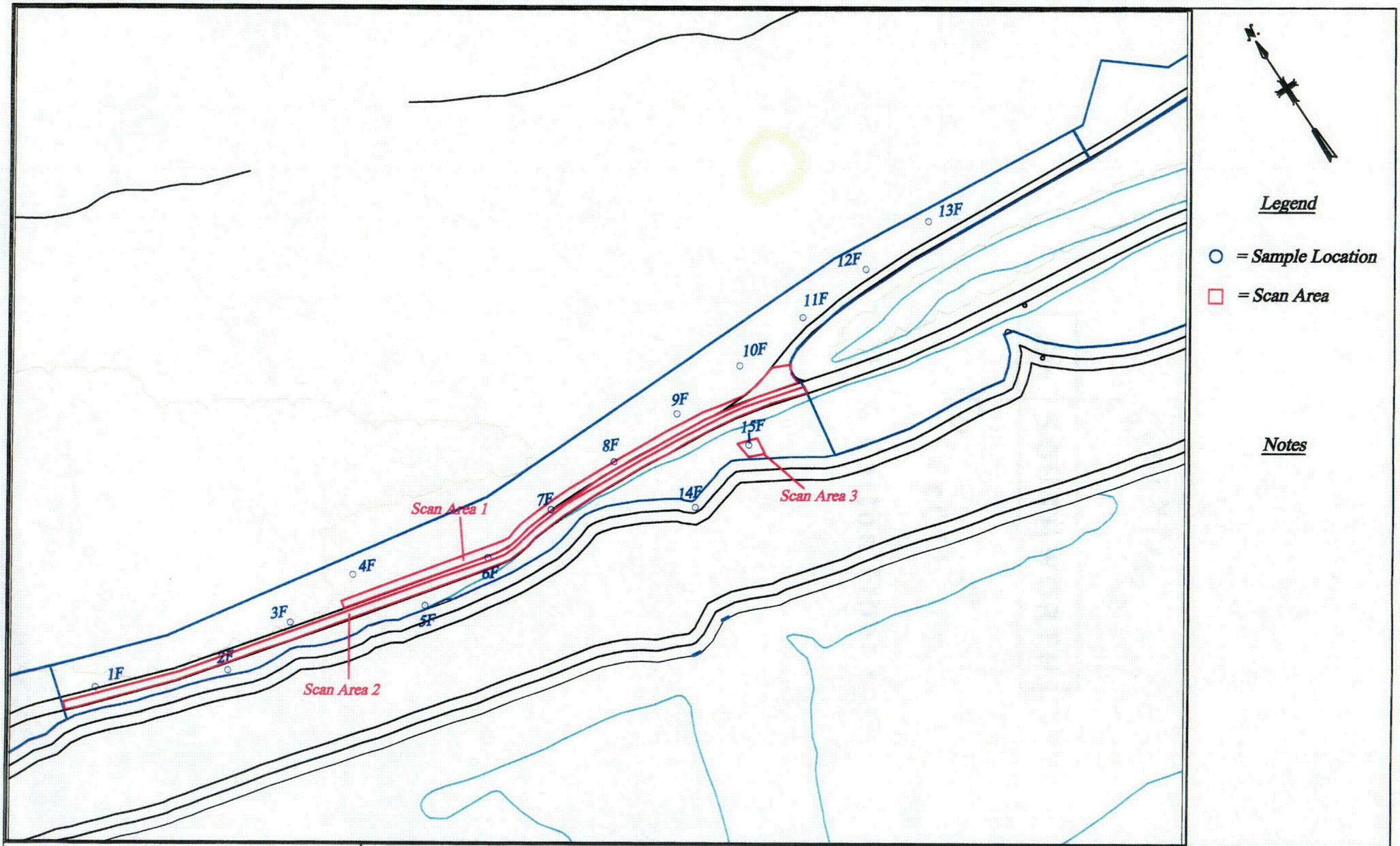
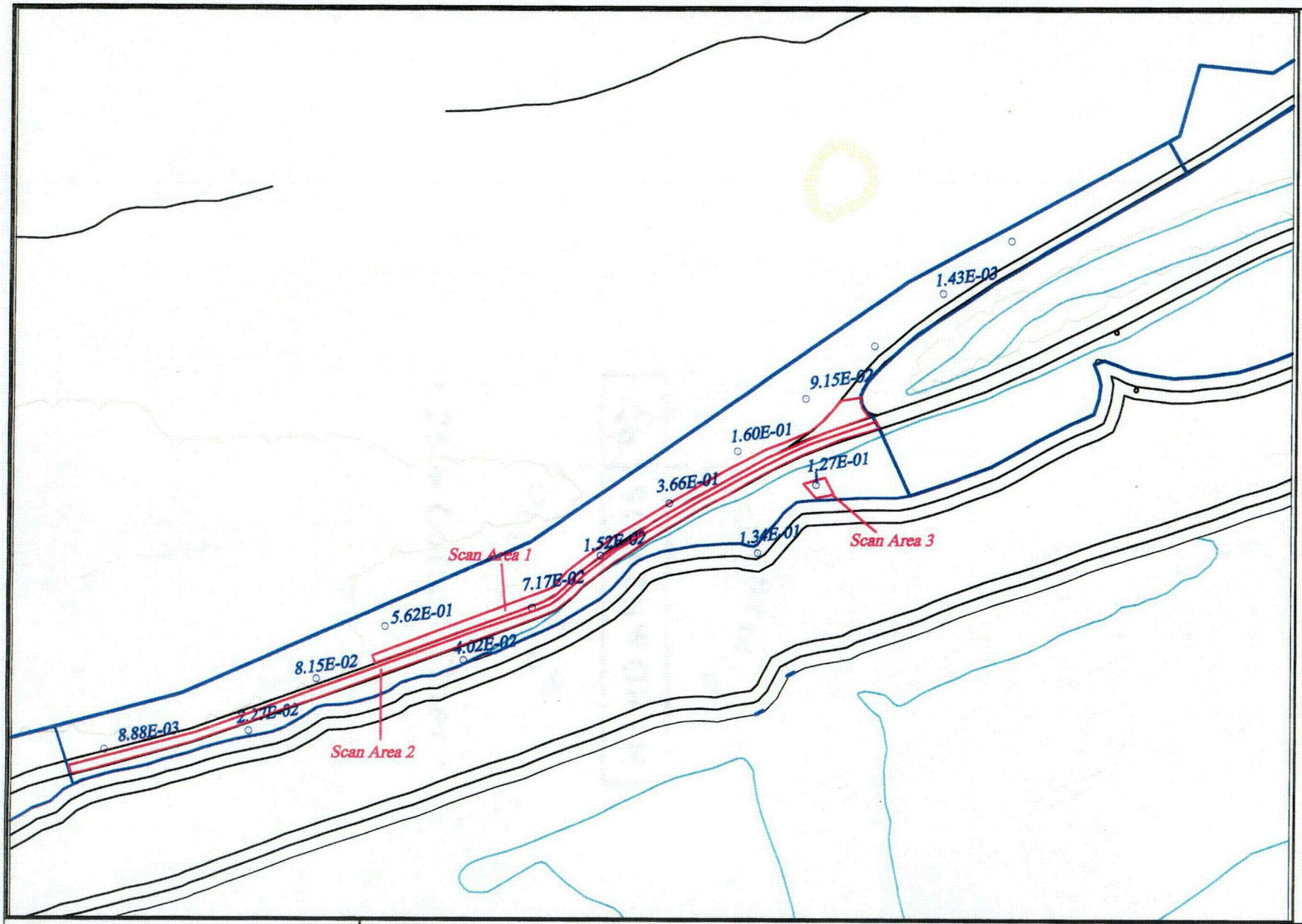


Figure 2

Connecticut Yankee Atomic Power Company
9528-0003 Final Status Survey Design

Date	Rev
May 2004	0

C02



Legend

○ = Sample Location

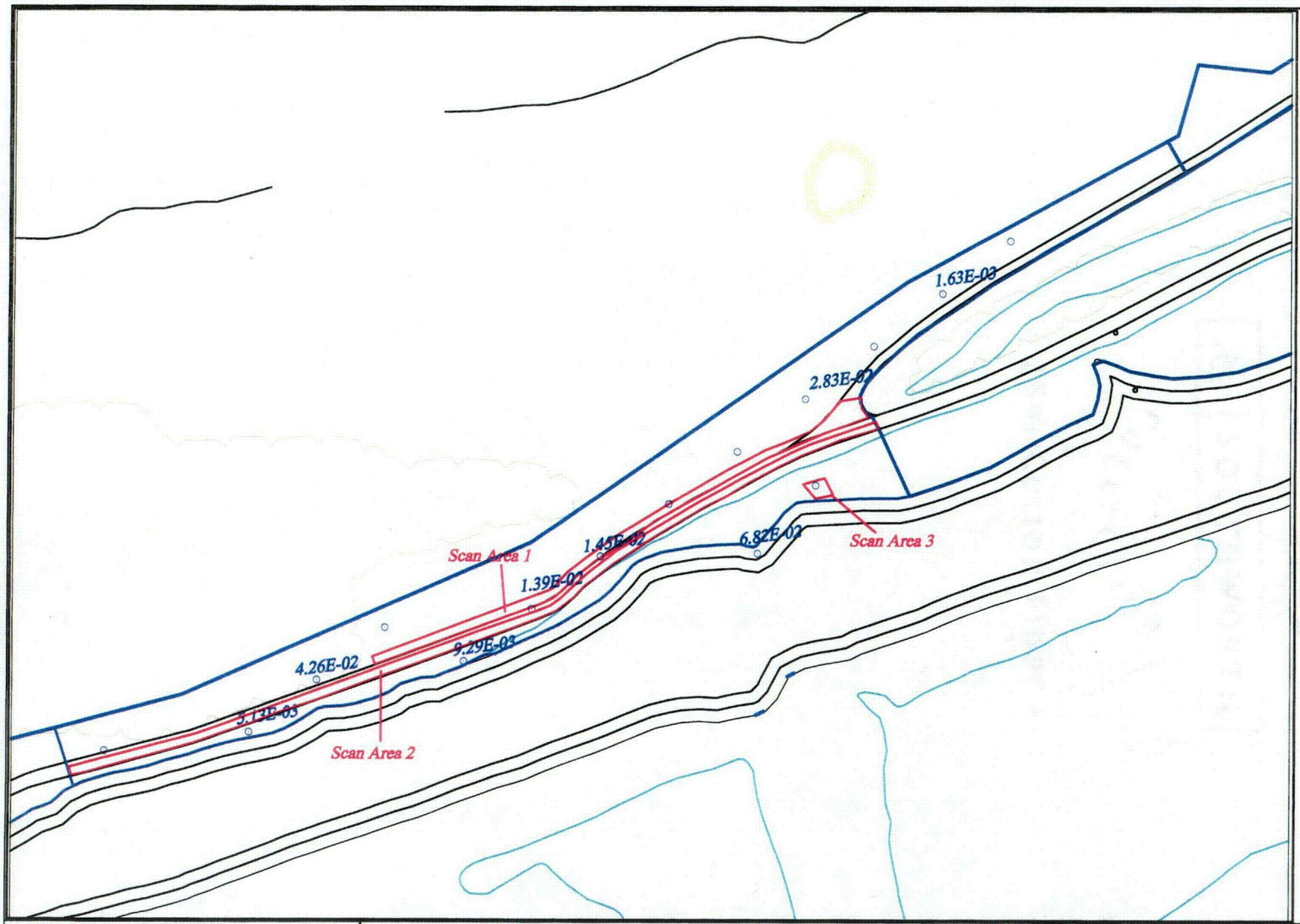
□ = Scan Area

Notes

All readings in pCi/g cesium-137. Samples with negative results not posted.

Figure 3	Connecticut Yankee Atomic Power Company 9528-0003 Final Status Survey Cesium-137 Posting Plot	Date	Rev
		May 2004	0

C03



Legend

○ = Sample Location

□ = Scan Area

Notes

All readings in pCi/g cobalt-60. Samples with negative results not posted.

Figure 4	Connecticut Yankee Atomic Power Company 9528-0003 Final Status Survey Cobalt-60 Posting Plot	Date	Rev
		May 2004	0

C04

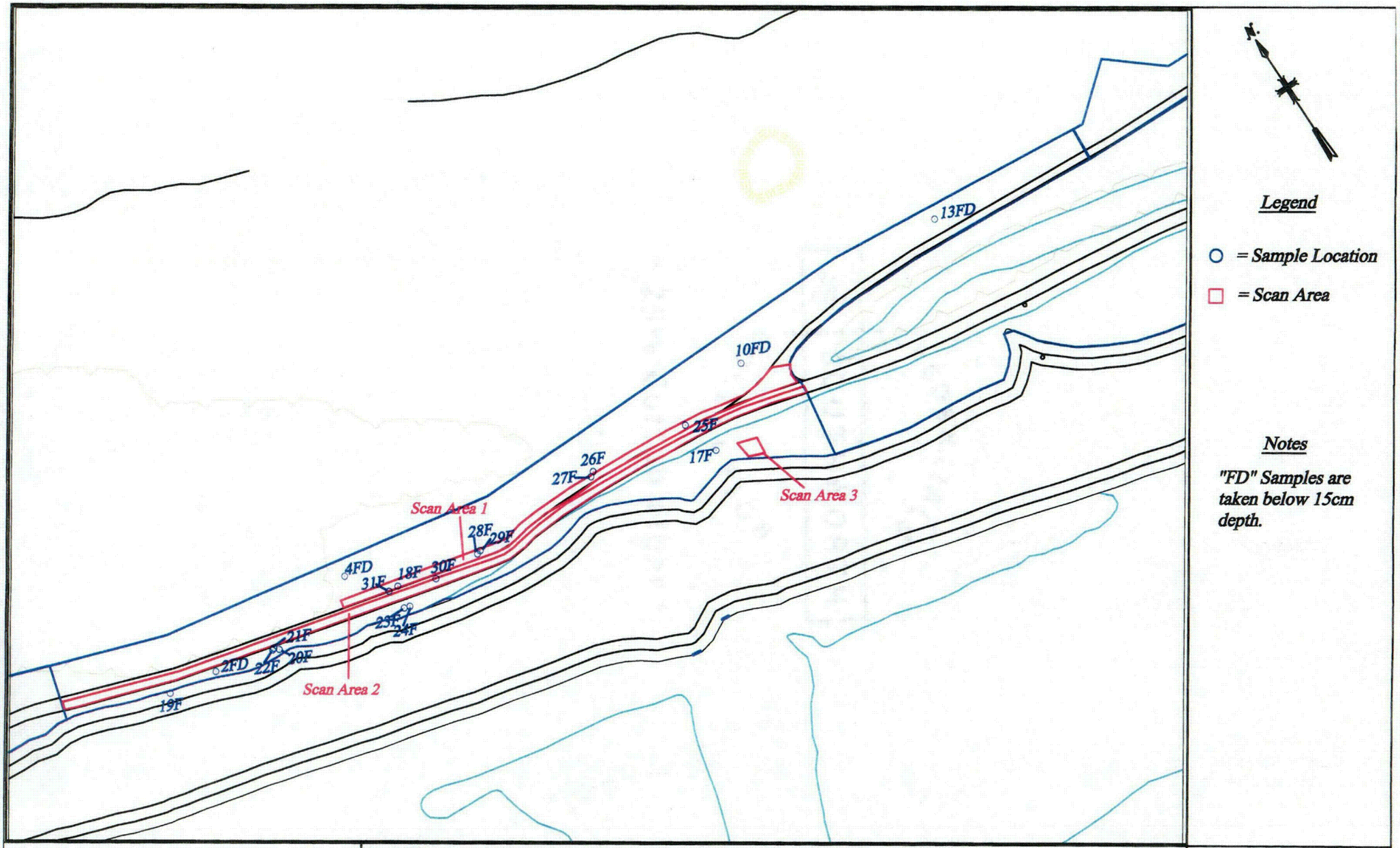


Figure 5

Connecticut Yankee Atomic Power Company
9528-0003 Final Status Survey-
Biased and Investigation Sample Locations

Date	Rev
May 2004	0

C05

Attachment 2a
Gamma Spectroscopy Data
(130 Pages)

Analytical Data Package Prepared For

Bechtel CT Yankee Project

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99352, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains _____ Pages

Report No.: 20980

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
21325		9528-0002-001F	J2J160133-1	E94PW1AA	9E94PW10	2292219
		9528-0002-002F	J2J160133-5	E94P41AA	9E94P410	2292219
		9528-0002-003F	J2J160133-6	E94P51AA	9E94P510	2292219
		9528-0002-005F	J2J160133-2	E94P01AA	9E94P010	2292219
		9528-0002-006F	J2J160133-3	E94P11AA	9E94P110	2292219
		9528-0002-007F	J2J160133-14	E94QL1AA	9E94QL10	2292219
		9528-0002-008F	J2J160133-13	E94QJ1AA	9E94QJ10	2292219
		9528-0002-009F	J2J160133-12	E94QF1AA	9E94QF10	2292219
		9528-0002-010F	J2J160133-8	E94P81AA	9E94P810	2292219
		9528-0002-011F	J2J160133-11	E94QD1AA	9E94QD10	2292219
		9528-0002-012F	J2J160133-10	E94QC1AA	9E94QC10	2292219
		9528-0002-014F	J2J160133-4	E94P31AA	9E94P310	2292219
		9528-0002-015F	J2J160133-9	E94QA1AA	9E94QA10	2292219
		9528-0002-020F	J2J160133-7	E94P71AA	9E94P710	2292219
		9528-0003-001F	J2J160133-15	E94QM1AA	9E94QM10	2292219
		9528-0003-0023F	J2J160133-30	E94RJ1AA	9E94RJ10	2292220
		9528-0003-002F	J2J160133-16	E94QP1AA	9E94QP10	2292220
		9528-0003-003F	J2J160133-17	E94QQ1AA	9E94QQ10	2292220
		9528-0003-005F	J2J160133-18	E94QR1AA	9E94QR10	2292220
		9528-0003-006F	J2J160133-29	E94RH1AA	9E94RH10	2292220
		9528-0003-007F	J2J160133-19	E94QW1AA	9E94QW10	2292220
		9528-0003-008F	J2J160133-20	E94QX1AA	9E94QX10	2292220
		9528-0003-009F	J2J160133-21	E94Q11AA	9E94Q110	2292220
		9528-0003-010F	J2J160133-22	E94Q21AA	9E94Q210	2292220
		9528-0003-010FS	J2J160133-23	E94Q41AA	9E94Q410	2292220
		9528-0003-011F	J2J160133-24	E94Q51AA	9E94Q510	2292220

Report No.: 20980

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
21325		9528-0003-012F	J2J160133-25	E94Q61AA	9E94Q610	2292220
		9528-0003-013F	J2J160133-26	E94Q81AA	9E94Q810	2292220
		9528-0003-014F	J2J160133-27	E94RA1AA	9E94RA10	2292220
		9528-0003-015F	J2J160133-28	E94RE1AA	9E94RE10	2292220

SEVERN TRENT SERVICES

CERTIFICATE OF ANALYSIS

November 19, 2002

Bechtel Corporation
362 Injun Hollow Road
East Hampton, CT 06424

Attention: Alan Heter

SDG Number	:	21325
Date SDG Received	:	October 15, 2002
Number of Samples	:	Thirty (30)
Sample Type	:	Soil
Data deliverable	:	Summary Report

I. Introduction

On October 15, 2002, thirty soil samples were received at STL Richland (STLR) for radiochemical analysis on six COCs (2002-00027, 2002-00031, 2002-00035, 2002-0039, 2002-0040, and 2002-0041). Upon receipt, the samples were assigned to Lot Number J2J160133 with the laboratory ID numbers to correspond with the Bechtel Corp. (BCT) specific IDs as listed on the cover page.

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical errors.

The requested analyses are: Gamma Spectroscopy
Gamma Spec by method RICH-RC-5017

III. Quality Control

The analytical results for each analysis performed under SDG 21325 includes a minimum of one Laboratory Control Sample (LCS) and one method (reagent) blank and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Six additional samples from COCs 2002-00031, 200-00035, 2002-0039, and 2002-0041 for analysis Type I (BFSSALL) were put into an independent lot and will be reported separately as per agreement with the client.

Gamma Spectroscopy
Gamma Spec by method RICH-RC-5017:
Seventeen of the eighteen requested radionuclides have been reported for each sample. The Bi-212 was over eight half lives since collection, therefore, not reported. Except as noted, the LCS, sample duplicate, batch blank and sample results are within required limits.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Barbara M. Gillespie
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) u_c - *Combined Uncertainty.*	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c *the combined uncertainty.* The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC= (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$+ $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Date: 19-Nov-02

Sample Results Summary
STL Richland STLRL
Ordered by Client Sample ID, Batch No.

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC/MDA	RER
9528-0002-020F	E94P71AA	ACTINIUM-228	9.01E-01 +- 2.7E-01		pCi/g		2.16E-01	
		AG-108M	1.29E-02 +- 2.6E-02	U	pCi/g		4.74E-02	
		AMERICIUM-241	-1.46E-02 +- 6.2E-02	U	pCi/g		1.03E-01	
		BISMUTH-214	6.19E-01 +- 1.7E-01	U	pCi/g		2.37E-01	
		COBALT-60	1.21E-01 +- 4.9E-02	U	pCi/g		1.05E-01	
		CESIUM-134	4.60E-02 +- 4.5E-02	U	pCi/g		8.70E-02	
		CESIUM-137	3.95E-01 +- 9.4E-02		pCi/g		6.44E-02	
		EUROPIUM-152	4.75E-02 +- 9.2E-02	U	pCi/g		1.67E-01	
		EUROPIUM-154	-2.99E-03 +- 9.4E-02	U	pCi/g		1.71E-01	
		EUROPIUM-155	6.53E-02 +- 8.4E-02	U	pCi/g		1.48E-01	
		POTASSIUM-40	1.16E+01 +- 1.9E+00		pCi/g		4.86E-01	
		MAGNESIUM-54	3.12E-03 +- 4.5E-02	U	pCi/g		7.99E-02	
		NIOBIUM-94	-2.70E-03 +- 3.0E-02	U	pCi/g		5.32E-02	
		LEAD-212	8.00E-01 +- 1.7E-01		pCi/g		1.30E-01	
		LEAD-214	7.94E-01 +- 1.7E-01		pCi/g		1.21E-01	
		RADIUM-226	6.19E-01 +- 1.7E-01	U	pCi/g		2.37E-01	
		THALLIUM-208	3.06E-01 +- 7.9E-02		pCi/g		5.65E-02	
9528-0003-001F	E94QM1AA	ACTINIUM-228	9.10E-01 +- 2.1E-01	U	pCi/g		3.40E-01	
		AG-108M	-7.78E-03 +- 2.0E-02	U	pCi/g		3.31E-02	
		AMERICIUM-241	-1.24E-02 +- 7.8E-02	U	pCi/g		1.28E-01	
		BISMUTH-214	6.15E-01 +- 1.3E-01	U	pCi/g		1.82E-01	
		COBALT-60	-1.33E-03 +- 2.6E-02	U	pCi/g		4.72E-02	
		CESIUM-134	5.62E-02 +- 3.4E-02	U	pCi/g		6.74E-02	
		CESIUM-137	8.88E-03 +- 2.6E-02	U	pCi/g		4.72E-02	
		EUROPIUM-152	-2.01E-02 +- 6.5E-02	U	pCi/g		1.11E-01	
		EUROPIUM-154	-2.65E-02 +- 8.9E-02	U	pCi/g		1.56E-01	
		EUROPIUM-155	8.48E-02 +- 6.8E-02	U	pCi/g		1.20E-01	
		POTASSIUM-40	1.22E+01 +- 1.8E+00		pCi/g		3.41E-01	
		MAGNESIUM-54	-1.47E-03 +- 3.5E-02	U	pCi/g		6.12E-02	
		NIOBIUM-94	-3.27E-04 +- 2.7E-02	U	pCi/g		4.71E-02	
		LEAD-212	7.77E-01 +- 1.6E-01		pCi/g		7.11E-02	
		LEAD-214	7.02E-01 +- 1.6E-01		pCi/g		8.00E-02	
		RADIUM-226	6.15E-01 +- 1.3E-01	U	pCi/g		1.82E-01	
		THALLIUM-208	2.74E-01 +- 6.4E-02	U	pCi/g		8.57E-02	

STL Richland
rptSTLRchSaSum
V3.96 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
[1] Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-0023F	E94RJ1AA	ACTINIUM-228	1.02E+00 +- 2.9E-01		pCi/g		2.12E-01	
		AG-108M	2.40E-02 +- 3.2E-02	U	pCi/g		5.95E-02	
		AMERICIUM-241	3.79E-02 +- 7.7E-02	U	pCi/g		1.26E-01	
		BISMUTH-214	1.09E+00 +- 2.2E-01		pCi/g		1.15E-01	
		COBALT-60	-4.13E-03 +- 3.9E-02	U	pCi/g		7.07E-02	
		CESIUM-134	3.53E-02 +- 4.8E-02	U	pCi/g		9.11E-02	
		CESIUM-137	6.28E-01 +- 1.4E-01		pCi/g		6.51E-02	
		EUROPIUM-152	-8.92E-02 +- 1.0E-01	U	pCi/g		1.71E-01	
		EUROPIUM-154	-1.59E-02 +- 1.2E-01	U	pCi/g		2.22E-01	
		EUROPIUM-155	7.41E-02 +- 1.0E-01	U	pCi/g		1.76E-01	
		POTASSIUM-40	1.13E+01 +- 2.0E+00		pCi/g		4.87E-01	
		MAGNESIUM-54	8.79E-03 +- 5.1E-02	U	pCi/g		9.19E-02	
		NIOBIUM-94	-3.02E-02 +- 3.2E-02	U	pCi/g		5.14E-02	
		LEAD-212	1.20E+00 +- 2.3E-01		pCi/g		9.40E-02	
		LEAD-214	1.24E+00 +- 2.4E-01		pCi/g		1.34E-01	
		RADIUM-226	1.09E+00 +- 2.2E-01		pCi/g		1.15E-01	
		THALLIUM-208	3.77E-01 +- 9.3E-02	U	pCi/g		1.37E-01	
9528-0003-002F	E94QP1AA	ACTINIUM-228	7.61E-01 +- 2.1E-01		pCi/g		1.58E-01	
		AG-108M	1.26E-02 +- 2.2E-02	U	pCi/g		3.92E-02	
		AMERICIUM-241	2.47E-02 +- 5.4E-02	U	pCi/g		8.42E-02	
		BISMUTH-214	5.52E-01 +- 1.3E-01	U	pCi/g		1.90E-01	
		COBALT-60	5.13E-03 +- 2.5E-02	U	pCi/g		4.72E-02	
		CESIUM-134	4.77E-02 +- 3.6E-02	U	pCi/g		6.90E-02	
		CESIUM-137	2.27E-02 +- 2.9E-02	U	pCi/g		5.44E-02	
		EUROPIUM-152	-4.78E-02 +- 6.6E-02	U	pCi/g		1.11E-01	
		EUROPIUM-154	7.44E-02 +- 8.4E-02	U	pCi/g		1.68E-01	
		EUROPIUM-155	2.93E-02 +- 7.0E-02	U	pCi/g		1.21E-01	
		POTASSIUM-40	1.03E+01 +- 1.6E+00		pCi/g		4.13E-01	
		MAGNESIUM-54	-8.66E-03 +- 3.3E-02	U	pCi/g		5.71E-02	
		NIOBIUM-94	-1.72E-02 +- 2.3E-02	U	pCi/g		3.87E-02	
		LEAD-212	7.18E-01 +- 1.5E-01		pCi/g		8.98E-02	
	..	LEAD-214	6.13E-01 +- 1.4E-01		pCi/g		8.65E-02	
		RADIUM-226	5.52E-01 +- 1.3E-01		pCi/g		8.36E-02	
		THALLIUM-208	2.88E-01 +- 6.6E-02		pCi/g		3.92E-02	

STL Richland

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RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-002F DUP	E94QP1AC	ACTINIUM-228	7.52E-01 +- 1.9E-01		pCi/g		1.42E-01	
		AG-108M	-9.45E-03 +- 2.2E-02	U	pCi/g		3.71E-02	
		AMERICIUM-241	8.57E-03 +- 5.5E-02	U	pCi/g		8.21E-02	
		BISMUTH-214	6.15E-01 +- 1.3E-01	U	pCi/g		1.96E-01	
		COBALT-60	-5.97E-03 +- 2.6E-02	U	pCi/g		4.66E-02	
		CESIUM-134	3.80E-02 +- 3.5E-02	U	pCi/g		6.64E-02	
		CESIUM-137	-5.14E-03 +- 2.7E-02	U	pCi/g		4.70E-02	
		EUROPIUM-152	-2.60E-02 +- 7.9E-02	U	pCi/g		1.18E-01	
		EUROPIUM-154	4.04E-02 +- 9.1E-02	U	pCi/g		1.73E-01	
		EUROPIUM-155	1.36E-02 +- 6.8E-02	U	pCi/g		1.16E-01	
		POTASSIUM-40	1.10E+01 +- 1.7E+00		pCi/g		3.23E-01	
		MAGNESIUM-54	8.35E-03 +- 3.5E-02	U	pCi/g		6.23E-02	
		NIOBIUM-94	-1.80E-02 +- 2.3E-02	U	pCi/g		3.84E-02	
		LEAD-212	6.47E-01 +- 1.4E-01		pCi/g		9.37E-02	
		LEAD-214	7.19E-01 +- 1.5E-01		pCi/g		8.47E-02	
		RADIUM-226	6.15E-01 +- 1.3E-01	U	pCi/g		1.96E-01	
		THALLIUM-208	2.43E-01 +- 7.8E-02	U	pCi/g		9.38E-02	
9528-0003-003F	E94QQ1AA	ACTINIUM-228	1.04E+00 +- 2.8E-01		pCi/g		2.13E-01	
		AG-108M	3.96E-03 +- 2.8E-02	U	pCi/g		4.91E-02	
		AMERICIUM-241	1.71E-02 +- 7.2E-02	U	pCi/g		1.15E-01	
		BISMUTH-214	1.14E+00 +- 2.1E-01		pCi/g		1.02E-01	
		COBALT-60	4.26E-02 +- 3.3E-02	U	pCi/g		7.08E-02	
		CESIUM-134	1.06E-01 +- 6.0E-02	U	pCi/g		9.44E-02	
		CESIUM-137	8.15E-02 +- 4.7E-02	U	pCi/g		8.98E-02	
		EUROPIUM-152	1.94E-02 +- 9.3E-02	U	pCi/g		1.62E-01	
		EUROPIUM-154	-1.37E-02 +- 1.1E-01	U	pCi/g		1.90E-01	
		EUROPIUM-155	1.02E-01 +- 9.3E-02	U	pCi/g		1.62E-01	
		POTASSIUM-40	1.04E+01 +- 1.7E+00		pCi/g		4.93E-01	
		MAGNESIUM-54	1.59E-02 +- 4.1E-02	U	pCi/g		7.46E-02	
		NIOBIUM-94	-3.92E-02 +- 3.1E-02	U	pCi/g		4.72E-02	
		LEAD-212	1.18E+00 +- 2.3E-01		pCi/g		1.37E-01	
		LEAD-214	1.06E+00 +- 2.1E-01		pCi/g		1.11E-01	
		RADIUM-226	1.14E+00 +- 2.1E-01		pCi/g		1.02E-01	
		THALLIUM-208	3.72E-01 +- 9.2E-02		pCi/g		6.39E-02	

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RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Date: 19-Nov-02

Sample Results Summary
STL Richland STLRL
Ordered by Client Sample ID, Batch No.

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-005F	E94QR1AA	ACTINIUM-228	7.88E-01 +- 2.0E-01	U	pCi/g		3.35E-01	
		AG-108M	1.69E-03 +- 2.4E-02	U	pCi/g		4.10E-02	
		AMERICIUM-241	-2.46E-01 +- 3.0E-01	U	pCi/g		4.84E-01	
		BISMUTH-214	5.97E-01 +- 1.6E-01	U	pCi/g		1.93E-01	
		COBALT-60	9.29E-03 +- 2.8E-02	U	pCi/g		5.26E-02	
		CESIUM-134	2.85E-02 +- 3.4E-02	U	pCi/g		6.40E-02	
		CESIUM-137	4.02E-02 +- 3.4E-02	U	pCi/g		6.28E-02	
		EUROPIUM-152	1.68E-02 +- 1.0E-01	U	pCi/g		1.39E-01	
		EUROPIUM-154	3.01E-02 +- 8.4E-02	U	pCi/g		1.58E-01	
		EUROPIUM-155	4.79E-02 +- 1.2E-01	U	pCi/g		2.12E-01	
		POTASSIUM-40	9.91E+00 +- 1.5E+00		pCi/g		4.15E-01	
		MAGNESIUM-54	1.47E-02 +- 3.4E-02	U	pCi/g		6.33E-02	
		NIOBIUM-94	-4.05E-03 +- 2.3E-02	U	pCi/g		4.02E-02	
		LEAD-212	6.96E-01 +- 1.5E-01		pCi/g		8.24E-02	
		LEAD-214	6.78E-01 +- 1.4E-01		pCi/g		1.02E-01	
		RADIUM-226	5.98E-01 +- 1.6E-01		pCi/g		8.98E-02	
		THALLIUM-208	2.44E-01 +- 6.4E-02		pCi/g		4.48E-02	
9528-0003-006F	E94RH1AA	ACTINIUM-228	1.26E+00 +- 2.6E-01		pCi/g		1.50E-01	
		AG-108M	1.05E-03 +- 2.0E-02	U	pCi/g		3.57E-02	
		AMERICIUM-241	5.62E-03 +- 6.7E-02	U	pCi/g		1.00E-01	
		BISMUTH-214	9.21E-01 +- 1.7E-01		pCi/g		8.73E-02	
		COBALT-60	1.39E-02 +- 2.6E-02	U	pCi/g		5.17E-02	
		CESIUM-134	6.11E-02 +- 3.3E-02	U	pCi/g		6.65E-02	
		CESIUM-137	7.17E-02 +- 3.5E-02	U	pCi/g		6.73E-02	
		EUROPIUM-152	-6.61E-02 +- 7.2E-02	U	pCi/g		1.17E-01	
		EUROPIUM-154	-2.76E-02 +- 7.9E-02	U	pCi/g		1.37E-01	
		EUROPIUM-155	8.95E-02 +- 7.9E-02	U	pCi/g		1.40E-01	
		POTASSIUM-40	1.38E+01 +- 2.0E+00		pCi/g		4.38E-01	
		MAGNESIUM-54	1.45E-03 +- 3.7E-02	U	pCi/g		6.45E-02	
		NIOBIUM-94	4.26E-03 +- 2.4E-02	U	pCi/g		4.34E-02	
		LEAD-212	9.80E-01 +- 1.9E-01		pCi/g		1.21E-01	
		LEAD-214	9.46E-01 +- 1.9E-01		pCi/g		8.55E-02	
		RADIUM-226	9.21E-01 +- 1.7E-01		pCi/g		8.73E-02	
		THALLIUM-208	3.94E-01 +- 7.9E-02		pCi/g		4.61E-02	

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RER - Replicate Error Ratio = (S-D)/|sqrt(sq(TPUs)+sq(TPUd))| as defined by ICPT BOA.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-007F	E94QW1AA	ACTINIUM-228	8.80E-01 +- 2.2E-01		pCi/g		1.41E-01	
		AG-108M	-1.27E-02 +- 2.1E-02	U	pCi/g		3.49E-02	
		AMERICIUM-241	8.28E-03 +- 1.5E-01	U	pCi/g		2.57E-01	
		BISMUTH-214	6.60E-01 +- 1.4E-01		pCi/g		8.73E-02	
		COBALT-60	1.45E-02 +- 2.8E-02	U	pCi/g		5.45E-02	
		CESIUM-134	3.25E-02 +- 3.5E-02	U	pCi/g		6.57E-02	
		CESIUM-137	1.52E-02 +- 2.9E-02	U	pCi/g		5.27E-02	
		EUROPIUM-152	-5.08E-02 +- 6.9E-02	U	pCi/g		1.13E-01	
		EUROPIUM-154	-7.16E-02 +- 8.6E-02	U	pCi/g		1.42E-01	
		EUROPIUM-155	-3.49E-02 +- 8.1E-02	U	pCi/g		1.38E-01	
		POTASSIUM-40	1.07E+01 +- 1.7E+00		pCi/g		3.53E-01	
		MAGNESIUM-54	3.02E-02 +- 3.5E-02	U	pCi/g		6.63E-02	
		NIOBIUM-94	-1.62E-02 +- 2.4E-02	U	pCi/g		3.91E-02	
		LEAD-212	8.61E-01 +- 1.6E-01		pCi/g		6.62E-02	
		LEAD-214	7.10E-01 +- 1.5E-01		pCi/g		8.27E-02	
		RADIUM-226	6.61E-01 +- 1.4E-01		pCi/g		8.73E-02	
		THALLIUM-208	2.86E-01 +- 7.1E-02		pCi/g		4.09E-02	
9528-0003-008F	E94QX1AA	ACTINIUM-228	1.27E+00 +- 3.5E-01		pCi/g		2.65E-01	
		AG-108M	-2.90E-02 +- 3.6E-02	U	pCi/g		5.94E-02	
		AMERICIUM-241	-2.39E-03 +- 7.9E-02	U	pCi/g		1.33E-01	
		BISMUTH-214	1.34E+00 +- 2.4E-01	U	pCi/g		3.46E-01	
		COBALT-60	-5.61E-02 +- 4.3E-02	U	pCi/g		6.25E-02	
		CESIUM-134	8.81E-02 +- 6.6E-02	U	pCi/g		1.11E-01	
		CESIUM-137	3.66E-01 +- 9.1E-02		pCi/g		7.38E-02	
		EUROPIUM-152	-1.59E-02 +- 1.1E-01	U	pCi/g		1.98E-01	
		EUROPIUM-154	-5.32E-02 +- 1.3E-01	U	pCi/g		2.25E-01	
		EUROPIUM-155	9.95E-02 +- 1.1E-01	U	pCi/g		1.89E-01	
		POTASSIUM-40	1.47E+01 +- 2.3E+00		pCi/g		5.94E-01	
		MAGNESIUM-54	7.20E-03 +- 5.1E-02	U	pCi/g		9.16E-02	
		NIOBIUM-94	-8.08E-06 +- 3.7E-02	U	pCi/g		6.67E-02	
		LEAD-212	1.50E+00 +- 2.8E-01		pCi/g		1.05E-01	
		LEAD-214	1.49E+00 +- 2.7E-01		pCi/g		1.37E-01	
		RADIUM-226	1.34E+00 +- 2.4E-01		pCi/g		1.22E-01	
		THALLIUM-208	4.31E-01 +- 1.2E-01		pCi/g		7.68E-02	

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rptSTLRchSaSum
V3.96 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-009F	E94Q11AA	ACTINIUM-228	1.36E+00 +- 3.1E-01		pCi/g		2.14E-01	
		AG-108M	2.35E-02 +- 2.7E-02	U	pCi/g		4.97E-02	
		AMERICIUM-241	4.15E-02 +- 8.5E-02	U	pCi/g		1.24E-01	
		BISMUTH-214	1.06E+00 +- 2.2E-01		pCi/g		1.00E-01	
		COBALT-60	-2.79E-02 +- 3.2E-02	U	pCi/g		5.08E-02	
		CESIUM-134	6.08E-02 +- 4.4E-02	U	pCi/g		8.68E-02	
		CESIUM-137	1.60E-01 +- 6.2E-02	J	pCi/g		6.49E-02	
		EUROPIUM-152	5.27E-02 +- 9.3E-02	U	pCi/g		1.67E-01	
		EUROPIUM-154	1.12E-01 +- 1.0E-01	U	pCi/g		2.08E-01	
		EUROPIUM-155	1.51E-01 +- 1.0E-01	U	pCi/g		1.79E-01	
		POTASSIUM-40	1.39E+01 +- 2.1E+00		pCi/g		4.42E-01	
		MAGNESIUM-54	-7.21E-03 +- 4.3E-02	U	pCi/g		7.47E-02	
		NIOBIUM-94	-1.05E-02 +- 3.0E-02	U	pCi/g		5.14E-02	
		LEAD-212	1.33E+00 +- 2.4E-01		pCi/g		8.60E-02	
		LEAD-214	1.30E+00 +- 2.3E-01		pCi/g		1.08E-01	
		RADIUM-226	1.06E+00 +- 2.2E-01		pCi/g		1.00E-01	
		THALLIUM-208	4.72E-01 +- 9.3E-02		pCi/g		5.86E-02	
9528-0003-010F	E94Q21AA	ACTINIUM-228	1.07E+00 +- 2.4E-01		pCi/g		1.83E-01	
		AG-108M	-3.20E-03 +- 2.7E-02	U	pCi/g		4.56E-02	
		AMERICIUM-241	-3.09E-01 +- 3.8E-01	U	pCi/g		6.08E-01	
		BISMUTH-214	7.84E-01 +- 1.8E-01	U	pCi/g		2.42E-01	
		COBALT-60	2.83E-02 +- 3.1E-02	U	pCi/g		6.27E-02	
		CESIUM-134	3.72E-02 +- 4.1E-02	U	pCi/g		7.73E-02	
		CESIUM-137	9.15E-02 +- 4.5E-02	U	pCi/g		8.50E-02	
		EUROPIUM-152	-6.04E-02 +- 1.4E-01	U	pCi/g		1.70E-01	
		EUROPIUM-154	3.36E-02 +- 1.1E-01	U	pCi/g		2.11E-01	
		EUROPIUM-155	5.44E-02 +- 1.5E-01	U	pCi/g		2.54E-01	
		POTASSIUM-40	1.16E+01 +- 1.8E+00		pCi/g		5.02E-01	
		MAGNESIUM-54	-3.96E-02 +- 4.6E-02	U	pCi/g		7.63E-02	
		NIOBIUM-94	-1.04E-02 +- 3.2E-02	U	pCi/g		5.52E-02	
		LEAD-212	1.11E+00 +- 2.2E-01		pCi/g		9.40E-02	
		LEAD-214	8.51E-01 +- 1.9E-01		pCi/g		1.15E-01	
		RADIUM-226	7.84E-01 +- 1.8E-01	U	pCi/g		2.42E-01	
		THALLIUM-208	3.50E-01 +- 7.8E-02	U	pCi/g		1.19E-01	

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RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-010FS	E94Q41AA	ACTINIUM-228	1.09E+00 +- 2.6E-01		pCi/g		1.60E-01	
		AG-108M	-1.96E-02 +- 2.3E-02	U	pCi/g		3.69E-02	
		AMERICIUM-241	6.14E-02 +- 1.7E-01	U	pCi/g		2.94E-01	
		BISMUTH-214	8.27E-01 +- 1.5E-01		pCi/g		7.28E-02	
		COBALT-60	1.46E-02 +- 2.9E-02	U	pCi/g		5.68E-02	
		CESIUM-134	2.90E-02 +- 3.5E-02	U	pCi/g		6.69E-02	
		CESIUM-137	9.82E-02 +- 4.1E-02	U	pCi/g		7.88E-02	
		EUROPIUM-152	5.57E-02 +- 7.4E-02	U	pCi/g		1.36E-01	
		EUROPIUM-154	8.10E-02 +- 9.7E-02	U	pCi/g		1.90E-01	
		EUROPIUM-155	1.30E-01 +- 9.2E-02	U	pCi/g		1.66E-01	
		POTASSIUM-40	1.18E+01 +- 1.8E+00		pCi/g		3.82E-01	
		MAGNESIUM-54	-7.72E-04 +- 3.5E-02	U	pCi/g		6.17E-02	
		NIOBIUM-94	6.87E-03 +- 2.5E-02	U	pCi/g		4.56E-02	
		LEAD-212	9.56E-01 +- 1.8E-01		pCi/g		8.28E-02	
		LEAD-214	9.08E-01 +- 1.7E-01		pCi/g		9.39E-02	
		RADIUM-226	8.28E-01 +- 1.5E-01		pCi/g		7.28E-02	
		THALLIUM-208	2.73E-01 +- 7.8E-02		pCi/g		5.05E-02	
9528-0003-011F	E94Q51AA	ACTINIUM-228	9.24E-01 +- 2.2E-01		pCi/g		1.56E-01	
		AG-108M	-2.77E-03 +- 2.2E-02	U	pCi/g		3.87E-02	
		AMERICIUM-241	4.83E-02 +- 6.0E-02	U	pCi/g		9.91E-02	
		BISMUTH-214	9.30E-01 +- 1.9E-01		pCi/g		8.96E-02	
		COBALT-60	-9.23E-03 +- 2.6E-02	U	pCi/g		4.52E-02	
		CESIUM-134	5.21E-02 +- 3.5E-02	U	pCi/g		6.93E-02	
		CESIUM-137	-1.36E-02 +- 3.0E-02	U	pCi/g		5.06E-02	
		EUROPIUM-152	-7.67E-03 +- 7.6E-02	U	pCi/g		1.33E-01	
		EUROPIUM-154	-2.72E-04 +- 8.1E-02	U	pCi/g		1.49E-01	
		EUROPIUM-155	4.66E-02 +- 7.7E-02	U	pCi/g		1.34E-01	
		POTASSIUM-40	1.02E+01 +- 1.6E+00		pCi/g		3.28E-01	
		MAGNESIUM-54	3.11E-03 +- 3.6E-02	U	pCi/g		6.30E-02	
		NIOBIUM-94	9.05E-03 +- 2.4E-02	U	pCi/g		4.46E-02	
		LEAD-212	9.20E-01 +- 1.7E-01		pCi/g		7.23E-02	
		LEAD-214	9.31E-01 +- 1.9E-01		pCi/g		8.91E-02	
		RADIUM-226	9.30E-01 +- 1.9E-01		pCi/g		8.96E-02	
		THALLIUM-208	3.14E-01 +- 6.5E-02		pCi/g		4.68E-02	

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rptSTLRchSaSum
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RER - Replicate Error Ratio = (S-D)/|sqrt(sq(TPUs)+sq(TPUd))| as defined by ICPT BOA.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Date: 19-Nov-02

Sample Results Summary
STL Richland STLRL
Ordered by Client Sample ID, Batch No.

Report No. : 20980 SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC/MDA	RER
9528-0003-012F	E94Q61AA	ACTINIUM-228	9.00E-01 +- 1.8E-01		pCi/g		1.05E-01	
		AG-108M	-2.14E-03 +- 1.9E-02	U	pCi/g		3.23E-02	
		AMERICIUM-241	3.43E-02 +- 5.8E-02	U	pCi/g		8.79E-02	
		BISMUTH-214	6.66E-01 +- 1.3E-01		pCi/g		7.61E-02	
		COBALT-60	1.63E-03 +- 2.2E-02	U	pCi/g		4.14E-02	
		CESIUM-134	4.31E-02 +- 3.0E-02	U	pCi/g		5.88E-02	
		CESIUM-137	1.43E-03 +- 2.3E-02	U	pCi/g		4.08E-02	
		EUROPIUM-152	-1.59E-02 +- 6.6E-02	U	pCi/g		1.12E-01	
		EUROPIUM-154	2.03E-02 +- 7.4E-02	U	pCi/g		1.39E-01	
		EUROPIUM-155	2.55E-02 +- 7.0E-02	U	pCi/g		1.21E-01	
		POTASSIUM-40	9.72E+00 +- 1.5E+00		pCi/g		3.85E-01	
		MAGNESIUM-54	-1.11E-02 +- 2.9E-02	U	pCi/g		5.04E-02	
		NIOBIUM-94	2.24E-02 +- 2.0E-02	U	pCi/g		4.06E-02	
		LEAD-212	7.71E-01 +- 1.5E-01		pCi/g		7.04E-02	
		LEAD-214	8.02E-01 +- 1.5E-01		pCi/g		7.93E-02	
		RADIUM-226	6.66E-01 +- 1.3E-01		pCi/g		7.81E-02	
		THALLIUM-208	2.87E-01 +- 6.9E-02		pCi/g		3.99E-02	
9528-0003-013F	E94Q81AA	ACTINIUM-228	9.41E-01 +- 2.2E-01	U	pCi/g		3.63E-01	
		AG-108M	1.10E-02 +- 2.6E-02	U	pCi/g		4.50E-02	
		AMERICIUM-241	-2.84E-02 +- 3.5E-01	U	pCi/g		5.77E-01	
		BISMUTH-214	1.07E+00 +- 1.9E-01		pCi/g		9.48E-02	
		COBALT-60	-2.91E-02 +- 3.3E-02	U	pCi/g		5.45E-02	
		CESIUM-134	5.25E-02 +- 4.1E-02	U	pCi/g		7.69E-02	
		CESIUM-137	-1.12E-02 +- 3.2E-02	U	pCi/g		5.43E-02	
		EUROPIUM-152	1.15E-01 +- 1.3E-01	U	pCi/g		1.64E-01	
		EUROPIUM-154	-5.24E-02 +- 9.7E-02	U	pCi/g		1.65E-01	
		EUROPIUM-155	1.45E-01 +- 1.4E-01	U	pCi/g		2.46E-01	
		POTASSIUM-40	1.05E+01 +- 1.6E+00		pCi/g		4.93E-01	
		MAGNESIUM-54	2.30E-02 +- 3.8E-02	U	pCi/g		7.07E-02	
		NIOBIUM-94	-1.44E-02 +- 2.7E-02	U	pCi/g		4.60E-02	
		LEAD-212	9.18E-01 +- 2.1E-01		pCi/g		1.07E-01	
		LEAD-214	1.07E+00 +- 2.0E-01		pCi/g		1.09E-01	
		RADIUM-226	1.07E+00 +- 1.9E-01		pCi/g		9.48E-02	
		THALLIUM-208	3.35E-01 +- 7.3E-02		pCi/g		5.15E-02	

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RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC/MDA	RER
9528-0003-014F	E94RA1AA	ACTINIUM-228	5.31E-01 +- 2.0E-01		pCi/g		1.61E-01	
		AG-108M	2.48E-03 +- 2.1E-02	U	pCi/g		3.75E-02	
		AMERICIUM-241	8.49E-02 +- 1.5E-01	U	pCi/g		2.60E-01	
		BISMUTH-214	6.50E-01 +- 1.3E-01	U	pCi/g		1.98E-01	
		COBALT-60	6.82E-02 +- 3.6E-02	U	pCi/g		7.08E-02	
		CESIUM-134	4.05E-02 +- 3.3E-02	U	pCi/g		6.39E-02	
		CESIUM-137	1.34E-01 +- 6.8E-02	J	pCi/g		4.85E-02	
		EUROPIUM-152	-3.05E-02 +- 6.5E-02	U	pCi/g		1.12E-01	
		EUROPIUM-154	2.81E-02 +- 7.6E-02	U	pCi/g		1.46E-01	
		EUROPIUM-155	5.40E-02 +- 8.2E-02	U	pCi/g		1.47E-01	
		POTASSIUM-40	1.08E+01 +- 1.7E+00		pCi/g		3.03E-01	
		MAGNESIUM-54	-1.12E-02 +- 3.5E-02	U	pCi/g		6.03E-02	
		NIOBIUM-94	-2.09E-02 +- 2.3E-02	U	pCi/g		3.68E-02	
		LEAD-212	7.39E-01 +- 1.5E-01		pCi/g		8.43E-02	
		LEAD-214	6.45E-01 +- 1.5E-01		pCi/g		8.06E-02	
		RADIUM-226	6.50E-01 +- 1.3E-01		pCi/g		7.13E-02	
		THALLIUM-208	2.66E-01 +- 7.7E-02		pCi/g		4.24E-02	
9528-0003-015F	E94RE1AA	ACTINIUM-228	5.10E-01 +- 2.1E-01		pCi/g		2.05E-01	
		AG-108M	-1.89E-02 +- 2.5E-02	U	pCi/g		4.05E-02	
		AMERICIUM-241	2.20E-02 +- 5.9E-02	U	pCi/g		9.01E-02	
		BISMUTH-214	6.50E-01 +- 1.5E-01	U	pCi/g		2.12E-01	
		COBALT-60	-1.07E-03 +- 2.8E-02	U	pCi/g		5.28E-02	
		CESIUM-134	6.71E-02 +- 3.6E-02	U	pCi/g		7.36E-02	
		CESIUM-137	1.27E-01 +- 6.3E-02	J	pCi/g		5.27E-02	
		EUROPIUM-152	3.95E-02 +- 7.9E-02	U	pCi/g		1.42E-01	
		EUROPIUM-154	-3.70E-02 +- 9.8E-02	U	pCi/g		1.72E-01	
		EUROPIUM-155	3.96E-02 +- 7.5E-02	U	pCi/g		1.30E-01	
		POTASSIUM-40	1.10E+01 +- 1.7E+00		pCi/g		4.32E-01	
		MAGNESIUM-54	-7.66E-03 +- 3.4E-02	U	pCi/g		5.95E-02	
		NIOBIUM-94	1.67E-03 +- 2.8E-02	U	pCi/g		5.18E-02	
		LEAD-212	7.28E-01 +- 1.5E-01		pCi/g		7.32E-02	
		LEAD-214	7.42E-01 +- 1.7E-01		pCi/g		8.69E-02	
		RADIUM-226	6.51E-01 +- 1.5E-01		pCi/g		8.32E-02	
		THALLIUM-208	2.62E-01 +- 8.5E-02	U	pCi/g		1.05E-01	

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RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No: 21325

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER

Number of Results: 544

STL Richland RER - Replicate Error Ratio = (S-D)/|sqrt(sq(TPUs)+sq(TPUd))| as defined by ICPT BOA.

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V3.96 A97

QC Results Summary
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No.: 21325

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	FAD0F1AA	ACTINIUM-228	3.98E-02 +- 7.9E-02	U	pCi/g				1.69E-01
		AG-108M	-1.75E-02 +- 2.3E-02	U	pCi/g				3.78E-02
		AMERICIUM-241	-1.81E-02 +- 3.5E-02	U	pCi/g				5.78E-02
		BISMUTH-214	2.89E-02 +- 5.9E-02	U	pCi/g				1.18E-01
		COBALT-60	-7.80E-03 +- 2.1E-02	U	pCi/g				3.92E-02
		CESIUM-134	-7.40E-04 +- 2.7E-02	U	pCi/g				5.20E-02
		CESIUM-137	5.14E-03 +- 2.0E-02	U	pCi/g				4.10E-02
		EUROPIUM-152	4.23E-02 +- 7.0E-02	U	pCi/g				1.35E-01
		EUROPIUM-154	1.40E-02 +- 6.7E-02	U	pCi/g				1.44E-01
		EUROPIUM-155	1.98E-02 +- 4.7E-02	U	pCi/g				8.86E-02
		POTASSIUM-40	1.06E-01 +- 4.0E-01	U	pCi/g				8.67E-01
		MAGNESIUM-54	2.60E-03 +- 2.5E-02	U	pCi/g				4.93E-02
		NIOBIUM-94	1.36E-02 +- 2.4E-02	U	pCi/g				5.04E-02
		LEAD-212	6.82E-04 +- 3.8E-02	U	pCi/g				6.93E-02
		LEAD-214	-3.12E-02 +- 5.2E-02	U	pCi/g				8.62E-02
		RADIUM-226	2.08E-02 +- 6.0E-02	U	pCi/g				1.18E-01
		THALLIUM-208	2.17E-02 +- 2.2E-02	U	pCi/g				4.87E-02
BLANK QC	FAD0G1AA	ACTINIUM-228	4.72E-02 +- 1.4E-01	U	pCi/g				2.66E-01
		AG-108M	7.38E-03 +- 2.8E-02	U	pCi/g				5.13E-02
		AMERICIUM-241	-2.25E-01 +- 3.4E-01	U	pCi/g				5.59E-01
		BISMUTH-214	-2.78E-02 +- 7.9E-02	U	pCi/g				1.40E-01
		COBALT-60	1.36E-02 +- 3.8E-02	U	pCi/g				7.65E-02
		CESIUM-134	1.49E-02 +- 3.6E-02	U	pCi/g				7.08E-02
		CESIUM-137	-2.29E-02 +- 3.4E-02	U	pCi/g				5.67E-02
		EUROPIUM-152	-6.92E-02 +- 9.9E-02	U	pCi/g				1.63E-01
		EUROPIUM-154	2.33E-02 +- 9.0E-02	U	pCi/g				1.85E-01
		EUROPIUM-155	-6.03E-02 +- 1.2E-01	U	pCi/g				2.00E-01
		POTASSIUM-40	-4.12E-01 +- 7.1E-01	U	pCi/g				1.55E+00
		MAGNESIUM-54	2.21E-02 +- 3.4E-02	U	pCi/g				6.88E-02
		NIOBIUM-94	-1.14E-02 +- 3.3E-02	U	pCi/g				5.91E-02
		LEAD-212	4.20E-04 +- 6.5E-02	U	pCi/g				1.13E-01
		LEAD-214	-1.13E-02 +- 6.8E-02	U	pCi/g				1.19E-01

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Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

QC Results Summary
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 19-Nov-02

Report No. : 20980

SDG No.: 21325

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	FAD0G1AA	RADIUM-226	-2.78E-02 +- 7.9E-02	U	pCi/g				1.40E-01
		THALLIUM-208	-1.74E-02 +- 4.3E-02	U	pCi/g				7.59E-02
LCS	FAD0F1AC	CESIUM-137	1.28E+00 +- 2.0E-01		pCi/g		125.68%	0.3	5.32E-02
LCS	FAD0G1AC	CESIUM-137	1.22E+00 +- 1.9E-01		pCi/g		119.70%	0.2	6.81E-02

Number of Results: 36

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V3.96 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Analytical Data Package Prepared For

Bechtel CT Yankee Project

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99352, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains _____ Pages

Report No.: 21084

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
21324		9528-0002-004F	J2J160129-3	E94N81AG	9E94N810	2292206
		9528-0002-004F	J2J160129-3	E94N81AH	9E94N810	2292207
		9528-0002-004F	J2J160129-3	E94N81AN	9E94N810	2292209
		9528-0002-004F	J2J160129-3	E94N81AL	9E94N810	2292210
		9528-0002-004F	J2J160129-3	E94N81AD	9E94N810	2292211
		9528-0002-004F	J2J160129-3	E94N81AC	9E94N810	2292213
		9528-0002-004F	J2J160129-3	E94N81AM	9E94N810	2292215
		9528-0002-004F	J2J160129-3	E94N81AJ	9E94N810	2292216
		9528-0002-004F	J2J160129-3	E94N81AK	9E94N810	2292217
		9528-0002-004F	J2J160129-3	E94N82AF	9E94N820	2331323
		9528-0002-013F	J2J160129-1	E94NR1AG	9E94NR10	2292206
		9528-0002-013F	J2J160129-1	E94NR1AH	9E94NR10	2292207
		9528-0002-013F	J2J160129-1	E94NR1AN	9E94NR10	2292209
		9528-0002-013F	J2J160129-1	E94NR1AL	9E94NR10	2292210
		9528-0002-013F	J2J160129-1	E94NR1AD	9E94NR10	2292211
		9528-0002-013F	J2J160129-1	E94NR1AC	9E94NR10	2292213
		9528-0002-013F	J2J160129-1	E94NR1AM	9E94NR10	2292215
		9528-0002-013F	J2J160129-1	E94NR1AJ	9E94NR10	2292216
		9528-0002-013F	J2J160129-1	E94NR1AK	9E94NR10	2292217
		9528-0002-013F	J2J160129-1	E94NR2AF	9E94NR20	2331323
		9528-0002-013FS	J2J160129-2	E94NW1AG	9E94NW10	2292206
		9528-0002-013FS	J2J160129-2	E94NW1AH	9E94NW10	2292207
		9528-0002-013FS	J2J160129-2	E94NW1AN	9E94NW10	2292209
		9528-0002-013FS	J2J160129-2	E94NW1AL	9E94NW10	2292210
		9528-0002-013FS	J2J160129-2	E94NW1AD	9E94NW10	2292211
		9528-0002-013FS	J2J160129-2	E94NW1AC	9E94NW10	2292213

Report No.: 21084

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
21324		9528-0002-013FS	J2J160129-2	E94NW1AM	9E94NW10	2292215
		9528-0002-013FS	J2J160129-2	E94NW1AJ	9E94NW10	2292216
		9528-0002-013FS	J2J160129-2	E94NW1AK	9E94NW10	2292217
		9528-0002-013FS	J2J160129-2	E94NW2AF	9E94NW20	2331323
		9528-0002-019F	J2J160129-4	E94PC1AG	9E94PC10	2292206
		9528-0002-019F	J2J160129-4	E94PC1AH	9E94PC10	2292207
		9528-0002-019F	J2J160129-4	E94PC1AF	9E94PC10	2292208
		9528-0002-019F	J2J160129-4	E94PC1AN	9E94PC10	2292209
		9528-0002-019F	J2J160129-4	E94PC1AL	9E94PC10	2292210
		9528-0002-019F	J2J160129-4	E94PC1AD	9E94PC10	2292211
		9528-0002-019F	J2J160129-4	E94PC1AC	9E94PC10	2292213
		9528-0002-019F	J2J160129-4	E94PC1AJ	9E94PC10	2292216
		9528-0002-019F	J2J160129-4	E94PC1AK	9E94PC10	2292217
		9528-0003-004F	J2J160129-5	E94PK1AG	9E94PK10	2292206
		9528-0003-004F	J2J160129-5	E94PK1AH	9E94PK10	2292207
		9528-0003-004F	J2J160129-5	E94PK1AN	9E94PK10	2292209
		9528-0003-004F	J2J160129-5	E94PK1AL	9E94PK10	2292210
		9528-0003-004F	J2J160129-5	E94PK1AD	9E94PK10	2292211
		9528-0003-004F	J2J160129-5	E94PK1AC	9E94PK10	2292213
		9528-0003-004F	J2J160129-5	E94PK1AM	9E94PK10	2292215
		9528-0003-004F	J2J160129-5	E94PK1AJ	9E94PK10	2292216
		9528-0003-004F	J2J160129-5	E94PK1AK	9E94PK10	2292217
		9528-0003-004F	J2J160129-5	E94PK2AF	9E94PK20	2331323
		9528-0003-019F	J2J160129-6	E94PN1AG	9E94PN10	2292206
		9528-0003-019F	J2J160129-6	E94PN1AH	9E94PN10	2292207
		9528-0003-019F	J2J160129-6	E94PN1AN	9E94PN10	2292209
		9528-0003-019F	J2J160129-6	E94PN1AL	9E94PN10	2292210
		9528-0003-019F	J2J160129-6	E94PN1AD	9E94PN10	2292211
		9528-0003-019F	J2J160129-6	E94PN1AC	9E94PN10	2292213
		9528-0003-019F	J2J160129-6	E94PN1AM	9E94PN10	2292215
		9528-0003-019F	J2J160129-6	E94PN1AJ	9E94PN10	2292216
		9528-0003-019F	J2J160129-6	E94PN1AK	9E94PN10	2292217
		9528-0003-019F	J2J160129-6	E94PN2AF	9E94PN20	2331323

SEVERN TRENT SERVICES

CERTIFICATE OF ANALYSIS

December 30, 2002

Bechtel Corporation
362 Injun Hollow Road
East Hampton, CT 06424

Attention: Alan Heter

AMENDED

SDG Number	:	21324
Date SDG Received	:	October 15, 2002
Number of Samples	:	Six (6)
Sample Type	:	Soil
Data deliverable	:	Summary Report

I. Introduction

On October 15, 2002, six soil samples were received at STL Richland (STLR) for radiochemical analysis on four chain-of-custodies (2002-00031,2002-00035, 2002-0039, 2002-0041). Upon receipt, the samples were assigned to Lot Number J2J160129 with the laboratory ID numbers to correspond with the Bechtel Corp. (BCT) specific IDs as listed on the cover page.

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical errors.

The requested analyses are:

Alpha Spectroscopy
Americium/Curium-isotopic by method RICH-RC-5080
Plutonium-238, 239/240 by method RICH-RC-5010
Gas Proportional Counting
Strontium-90 by method RICH-RC-5006
Gamma Spectroscopy
Gamma Spec by method RICH-RC-5017
Liquid Scintillation Counting
Tritium by method RICH-RC-5037

Technetium-99 by method RICH-RC-5065
Carbon-14 by method RICH-RC-5022
Iron-55 by method RICH-RC-5074
Nickel-63 by method RICH-RC-5069
Plutonium-241 by method RICH-RC-5010

III. Quality Control

The analytical results for each analysis performed under SDG 21324 includes a minimum of one Laboratory Control Sample (LCS) and one method (reagent) blank and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Alpha Spectroscopy

Americium/Curium-isotopic by method RICH-RC-5080:

All results are below the CRDL and/or below the MDC. Except as noted, the LCS, sample duplicate, batch blank and sample results are within contractual requirements.

Sample 9528-0002-019F failed with low tracer recovery (COC 2002-00035) in the first batch analysis. In the reanalysis batch, the result is below the CRDL and the MDC. The LCS, sample duplicate, batch blank and sample results are within contractual requirements.

Plutonium-238, 239/240 by method RICH-RC-5010:

All results are below the CRDL and/or below the MDC. The LCS, sample duplicate, batch blank and sample results are within contractual requirements.

Gas Proportional Counting

Strontium-90 by method RICH-RC-5006:

The MDA is slightly greater than the CRDL for sample 9528-0004-010F and it's duplicate due to matrix effects (these samples were processed twice). All other results are below the CRDL and/or below the MDC. Except as noted, the LCS, sample duplicate, batch blank and sample results are within contractual requirements.

Gamma Spectroscopy

Gamma Spec by method RICH-RC-5017:

Seventeen of the eighteen requested radionuclides have been reported for each sample. The Bi-212 was over eight half lives since collection, therefore, not reported. Except as noted, the LCS, sample duplicate, batch blank and sample results are within required limits.

Liquid Scintillation Counting

Tritium by method RICH-RC-5007:
All results are below the CRDL and/or below the MDC. The LCS, sample duplicate, batch blank and sample results are within contractual requirements.

Technetium-99 by method RICH-RC-5065:
All results are below the CRDL and/or below the MDC. The LCS, sample duplicate, batch blank, matrix spike, and sample results are within contractual requirements.

Carbon-14 by method RICH-RC-5022:
All results are below the CRDL and below the MDC. The LCS, sample duplicate, batch blank and sample results are within contractual requirements.

Iron-55 by method RICH-RC-5074:
All results are below the CRDL and below the MDC. The matrix spike is at 45% and the LCS is at 28%. Since all results are well below the CRDL, the data are accepted as is. Except as noted, the LCS, sample duplicate, batch blank, matrix spike, and sample results are within contractual requirements.

Nickel-63 by method RICH-RC-5069:
All results are below the CRDL and/or below the MDC. The LCS, sample duplicate, batch blank, matrix spike, and sample results are within contractual requirements.

Plutonium-241 by method RICH-RC-5080:
All results are below the CRDL and below the MDC. The LCS, sample duplicate, batch blank and sample results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Barbara M. Gillespie
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) *u_c - Combined Uncertainty.*	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty.* The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S-D)/[\mathrm{sqrt}(TPUs^2 + TPUd^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 30-Dec-02

Report No. : 21084

SDG No: 21324

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC/MDA	RER
9528-0002-019F	E94PC1AD	TECHNETIUM-99	4.92E-02 +- 2.1E-01	U	pCi/g	100.00%	3.15E-01	
9528-0002-019F	E94PC1AC	CARBON-14	1.39E-02 +- 7.7E-02	U	pCi/g	100.00%	1.44E-01	
9528-0002-019F	E94PC1AJ	NICKEL-63	1.49E+00 +- 5.2E+00	U	pCi/g	83.04%	6.66E+00	
9528-0002-019F	E94PC1AK	IRON-55	-1.76E+01 +- 1.1E+01	U	pCi/g	69.87%	2.47E+01	
9528-0002-019F DUP	E94PC1AQ	CARBON-14	4.73E-02 +- 7.8E-02	U	pCi/g	100.00%	1.44E-01	0.6
9528-0003-004F	E94PK1AG	PLUTONIUM-238	-9.56E-04 +- 1.9E-03	U	pCi/g	70.40%	2.29E-02	
		PLUTONIUM-239/40	1.91E-02 +- 1.9E-02	J	pCi/g	70.40%	1.29E-02	
9528-0003-004F	E94PK1AH	PLUTONIUM-241	6.94E-01 +- 3.9E-01	U	pCi/g	70.40%	7.51E-01	
9528-0003-004F	E94PK1AN	ACTINIUM-228	1.33E+00 +- 3.4E-01		pCi/g		2.30E-01	
		AG-108M	-8.03E-03 +- 3.4E-02	U	pCi/g		5.75E-02	
		AMERICIUM-241	1.16E-02 +- 1.5E-01	U	pCi/g		2.19E-01	
		BISMUTH-214	1.35E+00 +- 2.5E-01		pCi/g		1.26E-01	
		COBALT-60	-1.37E-02 +- 4.2E-02	U	pCi/g		7.40E-02	
		CESIUM-134	3.33E-02 +- 5.0E-02	U	pCi/g		9.44E-02	
		CESIUM-137	5.62E-01 +- 1.2E-01		pCi/g		7.25E-02	
		EUROPIUM-152	-3.53E-02 +- 1.1E-01	U	pCi/g		1.82E-01	
		EUROPIUM-154	-2.13E-01 +- 1.4E-01	U	pCi/g		2.02E-01	
		EUROPIUM-155	-1.43E-02 +- 1.1E-01	U	pCi/g		1.81E-01	
		POTASSIUM-40	1.05E+01 +- 2.0E+00		pCi/g		7.48E-01	
		MAGNESIUM-54	4.25E-02 +- 5.3E-02	U	pCi/g		1.02E-01	
		NIOBIUM-94	8.34E-04 +- 3.8E-02	U	pCi/g		6.87E-02	
		LEAD-212	1.29E+00 +- 2.5E-01		pCi/g		1.07E-01	
		LEAD-214	1.35E+00 +- 2.8E-01		pCi/g		1.35E-01	
		RADIUM-226	1.35E+00 +- 2.5E-01		pCi/g		1.26E-01	
		THALLIUM-208	4.10E-01 +- 9.1E-02		pCi/g		5.31E-02	
9528-0003-004F	E94PK1AL	TRITIUM	2.80E-02 +- 2.2E-02	U	pCi/g	100.00%	4.85E-02	
9528-0003-004F	E94PK1AD	TECHNETIUM-99	1.27E-01 +- 2.1E-01	U	pCi/g	100.00%	3.09E-01	
9528-0003-004F	E94PK1AC	CARBON-14	9.07E-03 +- 7.7E-02	U	pCi/g	100.00%	1.44E-01	
9528-0003-004F	E94PK1AM	AMERICIUM-241	4.79E-03 +- 9.6E-03	U	pCi/g	88.70%	1.30E-02	
		CURIUM-242	0.00E+00 +- 2.1E-02	U	pCi/g	88.70%	2.29E-02	
		CURIUM-243/244	-1.94E-03 +- 2.8E-03	U	pCi/g	88.70%	2.75E-02	
9528-0003-004F	E94PK1AJ	NICKEL-63	2.20E+00 +- 5.9E+00	U	pCi/g	74.39%	7.23E+00	

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RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Date: 30-Dec-02

Sample Results Summary
STL Richland STLRL
Ordered by Client Sample ID, Batch No.

Report No. : 21084 SDG No: 21324

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-004F	E94PK1AK	IRON-55	-2.26E+01 +- 9.1E+00	U	pCi/g	76.73%	1.63E+01	
9528-0003-004F	E94PK2AF	STRONTIUM-90	1.76E-02 +- 5.4E-02	U	pCi/g	15.21%	1.06E-01	
9528-0003-004F DUP	E94PK1AP	AMERICIUM-241	0.00E+00 +- 1.3E-02	U	pCi/g	76.04%	1.47E-02	0.6
		CURIUM-242	0.00E+00 +- 2.4E-02	U	pCi/g	76.04%	2.60E-02	0.0
		CURIUM-243/244	0.00E+00 +- 1.3E-02	U	pCi/g	76.04%	1.49E-02	0.3
9528-0003-019F	E94PN1AG	PLUTONIUM-238	4.57E-03 +- 9.2E-03	U	pCi/g	73.45%	1.24E-02	
		PLUTONIUM-239/40	-9.12E-04 +- 1.8E-03	U	pCi/g	73.45%	2.18E-02	
9528-0003-019F	E94PN1AH	PLUTONIUM-241	2.80E-01 +- 3.6E-01	U	pCi/g	73.40%	7.19E-01	
9528-0003-019F	E94PN1AN	ACTINIUM-228	7.84E-01 +- 2.2E-01	U	pCi/g		4.10E-01	
		AG-108M	1.75E-02 +- 2.8E-02	U	pCi/g		5.12E-02	
		AMERICIUM-241	3.14E-02 +- 1.1E-01	U	pCi/g		1.88E-01	
		BISMUTH-214	4.60E-01 +- 1.8E-01	U	pCi/g		2.37E-01	
		COBALT-60	1.50E-01 +- 5.5E-02	U	pCi/g		1.18E-01	
		CESIUM-134	1.02E-02 +- 4.1E-02	U	pCi/g		7.67E-02	
		CESIUM-137	2.91E-01 +- 7.5E-02	J	pCi/g		6.78E-02	
		EUROPIUM-152	-2.92E-02 +- 8.6E-02	U	pCi/g		1.44E-01	
		EUROPIUM-154	1.58E-02 +- 1.1E-01	U	pCi/g		2.08E-01	
		EUROPIUM-155	1.09E-01 +- 9.0E-02	U	pCi/g		1.66E-01	
		POTASSIUM-40	1.28E+01 +- 2.0E+00		pCi/g		4.05E-01	
		MAGNESIUM-54	-8.74E-03 +- 4.0E-02	U	pCi/g		7.16E-02	
		NIOBIUM-94	1.30E-02 +- 3.1E-02	U	pCi/g		5.92E-02	
		LEAD-212	5.75E-01 +- 1.5E-01		pCi/g		1.09E-01	
		LEAD-214	3.27E-01 +- 2.0E-01		pCi/g		1.11E-01	
		RADIUM-226	4.60E-01 +- 1.8E-01	U	pCi/g		2.37E-01	
		THALLIUM-208	2.75E-01 +- 7.8E-02	U	pCi/g		1.17E-01	
9528-0003-019F	E94PN1AL	TRITIUM	6.05E-02 +- 3.6E-02	U	pCi/g	100.00%	7.95E-02	
9528-0003-019F	E94PN1AD	TECHNETIUM-99	5.33E-02 +- 2.1E-01	U	pCi/g	100.00%	3.09E-01	
9528-0003-019F	E94PN1AC	CARBON-14	-3.34E-02 +- 7.6E-02	U	pCi/g	100.00%	1.44E-01	
9528-0003-019F	E94PN1AM	AMERICIUM-241	2.00E-02 +- 2.1E-02	U	pCi/g	79.23%	2.52E-02	
		CURIUM-242	0.00E+00 +- 2.3E-02	U	pCi/g	79.23%	2.52E-02	
		CURIUM-243/244	0.00E+00 +- 1.3E-02	U	pCi/g	79.23%	1.45E-02	
9528-0003-019F	E94PN1AJ	NICKEL-63	2.28E+00 +- 5.6E+00	U	pCi/g	77.20%	6.98E+00	

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J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Date: 30-Dec-02

Report No. : 21084

SDG No: 21324

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER
9528-0003-019F	E94PN1AK	IRON-55	3.78E+01 +- 1.7E+01	J	pCi/g	60.39%	2.66E+01	
9528-0003-019F	E94PN2AF	STRONTIUM-90	4.70E-02 +- 2.6E-02	J	pCi/g	48.12%	3.88E-02	
9528-0003-019F DUP	E94PN1AQ	NICKEL-63	1.79E+00 +- 4.9E+00	U	pCi/g	88.96%	6.01E+00	0.1
9528-0003-019F DUP	E94PN1AT	IRON-55	-1.08E+01 +- 1.9E+01	U	pCi/g	42.63%	3.75E+01	3.8
9528-0004-008F DUP	E969G1AN	PLUTONIUM-238	-8.40E-04 +- 1.7E-03	U	pCi/g	78.83%	2.01E-02	0.2
		PLUTONIUM-239/40	3.35E-02 +- 2.4E-02	J	pCi/g	78.83%	1.13E-02	0.7
9528-0004-008F DUP	E969G1AP	PLUTONIUM-241	1.40E-01 +- 3.3E-01	U	pCi/g	78.80%	6.72E-01	0.7
9528-0004-010F DUP	E969N2AN	STRONTIUM-90	3.30E-02 +- 4.0E-02	U	pCi/g	37.02%	7.25E-02	0.2

Number of Results: 200

STL Richland

rptSTLRchSaSum V3.97 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

QC Results Summary
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 30-Dec-02

Report No. : 21084

SDG No.: 21324

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
MATRIX SPIK	E94PC1AP	TECHNETIUM-99	2.17E+01 +- 1.5E+00		pCi/g	100.00%	79.72%	-0.2	3.13E-01
MATRIX SPIK	E969G1AQ	NICKEL-63	6.73E+02 +- 6.0E+01		pCi/g	61.40%	132.24%	0.3	8.98E+00
MATRIX SPIK	E969G1AT	IRON-55	2.62E+01 +- 1.6E+01		pCi/g	54.50%	45.04%	-0.6	2.29E+01
BLANK QC	FADT91AA	PLUTONIUM-238	0.00E+00 +- 1.2E-02	U	pCi/g	65.99%			1.36E-02
		PLUTONIUM-239/40	5.01E-03 +- 1.0E-02	U	pCi/g	65.99%			1.36E-02
BLANK QC	FADVF1AA	PLUTONIUM-241	7.18E-01 +- 4.2E-01	U	pCi/g	66.00%			8.30E-01
BLANK QC	FADVP1AA	STRONTIUM-90	1.16E-02 +- 2.1E-02	U	pCi/g	76.02%			3.96E-02
BLANK QC	FADV01AA	ACTINIUM-228	-4.76E-03 +- 1.3E-01	U	pCi/g				2.64E-01
		AG-108M	1.92E-02 +- 2.7E-02	U	pCi/g				5.25E-02
		AMERICIUM-241	-2.00E-02 +- 1.7E-01	U	pCi/g				2.96E-01
		BISMUTH-214	1.07E-02 +- 1.1E-01	U	pCi/g				1.55E-01
		COBALT-60	1.85E-02 +- 3.4E-02	U	pCi/g				7.30E-02
		CESIUM-134	2.03E-02 +- 4.1E-02	U	pCi/g				7.99E-02
		CESIUM-137	1.58E-02 +- 3.4E-02	U	pCi/g				6.51E-02
		EUROPIUM-152	-4.81E-02 +- 9.3E-02	U	pCi/g				1.59E-01
		EUROPIUM-154	1.97E-02 +- 8.9E-02	U	pCi/g				1.83E-01
		EUROPIUM-155	-5.04E-03 +- 8.2E-02	U	pCi/g				1.47E-01
		POTASSIUM-40	-8.38E-01 +- 7.3E-01	U	pCi/g				1.59E+00
		MAGNESIUM-54	1.36E-02 +- 3.5E-02	U	pCi/g				6.77E-02
		NIOBIUM-94	1.82E-02 +- 3.7E-02	U	pCi/g				7.23E-02
		LEAD-212	-6.81E-04 +- 5.8E-02	U	pCi/g				1.06E-01
		LEAD-214	-7.17E-02 +- 7.9E-02	U	pCi/g				1.39E-01
		RADIUM-226	1.07E-02 +- 1.1E-01	U	pCi/g				1.55E-01
		THALLIUM-208	-2.06E-02 +- 4.1E-02	U	pCi/g				7.30E-02
BLANK QC	FADV81AA	TRITIUM	1.65E-01 +- 1.4E-01	U	pCi/g	100.00%			3.07E-01
BLANK QC	FADWM1AA	TECHNETIUM-99	2.75E-01 +- 2.2E-01	U	pCi/g	100.00%			3.10E-01
BLANK QC	FADW31AA	CARBON-14	-8.46E-02 +- 7.5E-02	U	pCi/g	100.00%			1.44E-01
BLANK QC	FADXD1AA	AMERICIUM-241	-1.16E-03 +- 2.3E-03	U	pCi/g	71.24%			2.77E-02
		CURIUM-242	-2.05E-03 +- 4.1E-03	U	pCi/g	71.24%			4.90E-02

STL Richland
rptSTLRchQcSum
V3.97 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

QC Results Summary
STL Richland STLRL
Ordered by QC Type, Batch No.

Date: 30-Dec-02

Report No. : 21084

SDG No.: 21324

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	FADXD1AA	CURIUM-243/244	2.34E-03 +- 1.2E-02	U	pCi/g	71.24%			3.70E-02
BLANK QC	FADXV1AA	NICKEL-63	8.86E+00 +- 5.5E+00	J	pCi/g	87.06%			6.34E+00
BLANK QC	FADX61AA	IRON-55	-8.61E+01 +- 1.8E+01	U	pCi/g	60.82%			1.09E+01
BLANK QC	FD0VH1AA	STRONTIUM-90	-1.05E-03 +- 1.5E-02	U	pCi/g	85.70%			3.03E-02
LCS	FADT91AC	PLUTONIUM-239/40	4.83E-01 +- 1.3E-01	J	pCi/g	63.89%	106.18%	0.1	1.44E-02
LCS	FADVF1AC	PLUTONIUM-241	1.99E+01 +- 1.4E+00		pCi/g	63.90%	86.38%	-0.1	8.78E-01
LCS	FADVP1AC	STRONTIUM-90	5.02E-01 +- 1.1E-01		pCi/g	74.27%	108.85%	0.1	4.09E-02
LCS	FADV01AC	CESIUM-137	1.18E+00 +- 1.9E-01		pCi/g		116.27%	0.2	6.05E-02
LCS	FADV81AC	TRITIUM	7.14E+00 +- 4.0E-01	J	pCi/g	100.00%	103.62%	0.0	3.12E-01
LCS	FADWM1AC	TECHNETIUM-99	1.18E+01 +- 9.1E-01	J	pCi/g	100.00%	86.78%	-0.1	3.11E-01
LCS	FADW31AC	CARBON-14	2.56E+00 +- 1.5E-01	J	pCi/g	100.00%	94.19%	-0.1	1.44E-01
LCS	FADXD1AC	AMERICIUM-241	4.33E+00 +- 8.7E-01		pCi/g	57.34%	94.85%	-0.1	3.30E-02
LCS	FADXV1AC	NICKEL-63	3.56E+02 +- 3.3E+01		pCi/g	86.26%	69.99%	-0.3	6.31E+00
LCS	FADX61AC	IRON-55	2.69E+00 +- 1.2E+01	U	pCi/g	67.23%	18.00%	-0.8	1.87E+01
LCS	FD0VH1AC	STRONTIUM-90	9.66E-01 +- 2.1E-01		pCi/g	43.99%	305.50%	2.0	4.46E-02

Number of Results: 44

STL Richland
rptSTLRchQcSum
V3.97 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

MATRIX OF REQUIRED ANALYSES AND DETECTION SENSITIVITIES

Column 1	Column 2	Column 3	Column 4 BFSSGAM	Column 5 BFSSALL
Radionuclide	Analyses	Soil MDC (pCi/g)	Required analysis?	Required analysis ?
Ac-228	(GEA)	N/A	YES	YES
Ag-108m	(GEA)	2.86E-01	YES	YES
Am-241	(GEA)	1.03E+00	YES	YES
Am-241	(AEA)	1.03E+00		YES
Bi-212	(GEA)	N/A	YES	YES
Bi-214	(GEA)	N/A	YES	YES
C-14	(Liquid Scintillation)	2.26E-01		YES
Cm-243/244	(AEA)	1.16E+00		YES
Co-60	(GEA)	1.52E-01	YES	YES
Cs-134	(GEA)	1.87E-01	YES	YES
Cs-137	(GEA)	3.16E-01	YES	YES
Eu-152	(GEA)	4.04E-01	YES	YES
Eu-154	(GEA)	3.72E-01	YES	YES
Eu-155	(GEA)	1.57E+01	YES	YES
Fe-55		1.10E+03		YES
H-3	(Liquid Scintillation)	1.65E+01		YES
K-40	(GEA)	N/A	YES	YES
Mn-54	(GEA)	6.96E-01	YES	YES
Nb-94	(GEA)	2.85E-01	YES	YES
Ni-63	(Liquid Scintillation)	2.89E+01		YES
Pb-212	(GEA)	N/A	YES	YES
Pb-214	(GEA)	N/A	YES	YES
Pu-238	(AEA)	1.18E+00		YES
Pu-239/240	(AEA)	1.07E+00		YES
Pu-241	(Liquid Scintillation)	3.48E+01		YES
Ra-226	(GEA)	N/A	YES	YES
Sr-90	(GPC)	6.20E-02		YES
Tc-99	(Liquid Scintillation)	5.04E-01		YES
Tl-208	(GEA)	N/A	YES	YES

FORM II

MATRIX SPIKE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J160129-4 Report No. : 21084 Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292211	Work Order:	E94PC1AP		Report DB ID:	E94PC1PW		Orig Sa DB ID:						
TECHNETIUM-99	2.17E+01		4.0E-01	1.5E+00	3.13E-01	pCi/g	100.00%	79.72%	2.72E+01	6.1E-01	11/6/02 02:37 a	5.0	RICHRC5078
		RER										g	LSC6

Number of Results: 1

Comments:

STL Richland RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

rpISTLRchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.

V3.97 A97

STL RICHLAND

FORM II

MATRIX SPIKE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21338

Lot-Sample No.: J2J170140-1 Report No. : 21084 Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order:	E969G1AQ		Report DB ID:	E969G1QW		Orig Sa DB ID:						
NICKEL-63	6.73E+02		1.2E+01	6.0E+01	8.98E+00	pCi/g	61.40%	132.24%	5.09E+02	1.7E+01	11/16/02 12:22 a	0.2502	RC5069
	:	RER										g	LSC4
Batch: 2292217	Work Order:	E969G1AT		Report DB ID:	E969G1TW		Orig Sa DB ID:						
IRON-55	2.62E+01			1.6E+01	2.29E+01	pCi/g	54.50%	45.04%	5.82E+01	3.1E+00	11/15/02 03:00 p	0.2502	FBXZ
		RER										g	LSC7

Number of Results: 2

Comments:

STL Richland
rptSTLRchMs
V3.97 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2K270000-323 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2331323	Work Order: FD0VH1AA			Report DB ID: FD0VH1AB								
STRONTIUM-90	-1.05E-03	U	1.5E-02	1.5E-02	3.03E-02	pCi/g	65.70%	-0.03	12/25/02 03:42 p		15.0	CMUD
					1.40E-02	6.00E-02		-0.14			g	GPC2B

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-206

Report No.: 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: FADT91AC			Report DB ID: FADT91CS									
PLUTONIUM-239/40	4.83E-01		1.0E-01	1.3E-01	1.44E-02	pCi/g	63.89%	4.55E-01	2.3E-02	106.18%	11/19/02 01:24 p	2.0	RICHRC5010
							Rec Limits:	70.	130.	0.1		g	ALP131

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRichLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-207 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292207	Work Order: FADVF1AC			Report DB ID: FADVF1CS									
PLUTONIUM-241	1.99E+01		7.1E-01	1.4E+00	8.78E-01	pCi/g	63.90%	2.30E+01	1.0E+00	86.38%	11/26/02 09:08 a	2.0	RICHRC5010
							Rec Limits:	70.	130.	-0.1		g	LSC4

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-208 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: FADVP1AC			Report DB ID: FADVP1CS									
STRONTIUM-90	5.02E-01		4.9E-02	1.1E-01	4.09E-02	pCi/g	74.27%	4.61E-01	9.1E-03	108.85%	11/25/02 01:57 p	10.0	CMUD
							Rec Limits:	70.	130.	0.1		g	GPC2C

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-209 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292209	Work Order: FADV01AC			Report DB ID: FADV01CS									
CESIUM-137	1.18E+00		1.9E-01	1.9E-01	6.05E-02	pCi/g		1.01E+00	3.4E-02	116.27%	11/8/02 03:21 p	200.0	E901.1
							Rec Limits:	70.	130.	0.2		g	GER7S1

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-210 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: FADV81AC			Report DB ID: FADV81CS									
TRITIUM	7.14E+00		3.7E-01	4.0E-01	3.12E-01	pCi/g	100.00%	6.89E+00	2.4E-01	103.62%	11/2/02 06:18 a	10.0	E906.0
							Rec Limits:	70.	130.	0.0		g	LSC6

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-211 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292211	Work Order: FADWM1AC			Report DB ID: FADWM1CS									
TECHNETIUM-99	1.18E+01		3.1E-01	9.1E-01	3.11E-01	pCi/g	100.00%	1.36E+01	3.1E-01	86.78%	11/6/02 09:52 a	5.0	RICHRC5078
							Rec Limits:	70.	130.	-0.1		g	LSC6

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-213

Report No. : 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292213	Work Order: FADW31AC			Report DB ID: FADW31CS									
CARBON-14	2.56E+00		9.3E-02	1.5E-01	1.44E-01	pCi/g	100.00%	2.72E+00	8.8E-02	94.19%	11/2/02 09:41 p	5.0	RC5022
							Rec Limits:	70.	130.	-0.1		g	LSC3

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-215

Report No. : 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292215	Work Order: FADXD1AC			Report DB ID: FADXD1CS									
AMERICIUM-241	4.33E+00		3.5E-01	8.7E-01	3.30E-02	pCi/g	57.34%	4.57E+00	1.5E-01	94.85%	11/24/02 11:04 a	2.0	RICHRC5080
							Rec Limits:	70.	130.	-0.1		g	ALP46

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-216

Report No.: 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order: FADXV1AC			Report DB ID: FADXV1CS									
NICKEL-63	3.56E+02		7.5E+00	3.3E+01	6.31E+00	pCi/g	86.26%	5.08E+02	1.7E+01	69.99%	11/15/02 07:25 a	0.25	RC5069
							Rec Limits:	70.	130.	-0.3		g	LSC4

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-217 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292217	Work Order: FADX61AC			Report DB ID: FADX61CS									
IRON-55	2.69E+00	U		1.2E+01	1.87E+01	pCi/g	67.23%	1.50E+01	8.0E-01	18.00%	11/15/02 03:00 p	0.25	FBXZ
							Rec Limits:	70.	130.	-0.8		g	LSC7

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V3.97 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2K270000-323 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2331323	Work Order: FD0VH1AC			Report DB ID: FD0VH1CS									
STRONTIUM-90	9.66E-01		7.4E-02	2.1E-01	4.46E-02	pCi/g	43.99%	3.16E-01	6.2E-03	305.50%	12/25/02 03:42 p	15.0	CMUD
							Rec Limits:	70.	130.	2.0		g	GPC2C

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-217 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292217	Work Order:	FADX61AA		Report DB ID:	FADX61AB							
IRON-55	-8.61E+01	U		1.8E+01	1.09E+01	pCi/g	60.82%	-(7.9)	11/15/02 03:00 p		0.25	FBXZ
					4.89E+00	1.10E+02		-(9.5)			g	LSC7

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-216 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order:	FADXV1AA		Report DB ID:	FADXV1AB							
NICKEL-63	8.86E+00	J	2.8E+00	5.5E+00	6.34E+00	pCi/g	87.06%	(1.4)	11/15/02 09:06 a		0.25	RC5069
					3.09E+00	2.89E+01		(3.2)			g	LSC4

Number of Results: 1

Comments:

STL Richland
rptSTLRichBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-215 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292215	Work Order:	FADXD1AA		Report DB ID:	FADXD1AB							
AMERICIUM-241	-1.16E-03	U	2.3E-03	2.3E-03	2.77E-02	pCi/g	71.24%	-0.04	11/24/02 11:03 a		2.0	RICHRC5080
					6.02E-03	1.03E+00		-1.			g	ALP45
CURIUM-242	-2.05E-03	U	4.1E-03	4.1E-03	4.90E-02	pCi/g	71.24%	-0.04	11/24/02 11:03 a		2.0	RICHRC5080
					1.06E-02			-1.			g	ALP45
CURIUM-243/244	2.34E-03	U	1.2E-02	1.2E-02	3.70E-02	pCi/g	71.24%	0.06	11/24/02 11:03 a		2.0	RICHRC5080
					1.06E-02	1.16E+00		0.38			g	ALP45

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II
BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-213 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292213	Work Order:	FADW31AA		Report DB ID:	FADW31AB							
CARBON-14	-8.46E-02	U	5.9E-02	7.5E-02	1.44E-01	pCi/g	100.00%	-0.59	11/2/02 06:18 p		5.0	RC5022
					7.07E-02	2.26E-01		-(2.3)			g	LSC3

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-211 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292211	Work Order:	FADWM1AA		Report DB ID:	FADWM1AB							
TECHNETIUM-99	2.75E-01	U	1.3E-01	2.2E-01	3.10E-01	pCi/g	100.00%	0.89	11/6/02 07:48 a		5.0	RICHRC5078
					1.51E-01	5.04E-01		(2.5)			g	LSC6

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-210 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: FADV81AA			Report DB ID: FADV81AB								
TRITIUM	1.65E-01	U	1.3E-01	1.4E-01	3.07E-01	pCi/g	100.00%	0.54	11/2/02 05:36 a		10.0	E906.0
					1.43E-01	1.65E+01		(2.3)			g	LSC6

Number of Results: 1

Comments:

STL Richland
rpISTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-209 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
NIOBIUM-94	1.82E-02	U	3.7E-02	3.7E-02	7.23E-02	pCi/g		0.25	11/8/02 03:23 p		200.0	E901.1
						2.85E-01		0.97			g	GER4$1
LEAD-212	-6.81E-04	U	5.8E-02	5.8E-02	1.06E-01	pCi/g		-0.01	11/8/02 03:23 p		200.0	E901.1
								-0.02			g	GER4$1
LEAD-214	-7.17E-02	U	7.9E-02	7.9E-02	1.39E-01	pCi/g		-0.52	11/8/02 03:23 p		200.0	E901.1
								-(1.8)			g	GER4$1
RADIUM-226	1.07E-02	U	1.1E-01	1.1E-01	1.55E-01	pCi/g		0.07	11/8/02 03:23 p		200.0	E901.1
								0.2			g	GER4$1
THALLIUM-208	-2.06E-02	U	4.1E-02	4.1E-02	7.30E-02	pCi/g		-0.28	11/8/02 03:23 p		200.0	E901.1
								-1.			g	GER4$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-209 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292209	Work Order:	FADV01AA		Report DB ID:	FADV01AB							
ACTINIUM-228	-4.76E-03	U	1.3E-01	1.3E-01	2.64E-01	pCi/g		-0.02	11/8/02 03:23 p		200.0	E901.1
								-0.07			g	GER4$1
AG-108M	1.92E-02	U	2.7E-02	2.7E-02	5.25E-02	pCi/g		0.37	11/8/02 03:23 p		200.0	E901.1
								(1.4)			g	GER4$1
AMERICIUM-241	-2.00E-02	U	1.7E-01	1.7E-01	2.96E-01	pCi/g		-0.07	11/8/02 03:23 p		200.0	E901.1
								-0.24			g	GER4$1
BISMUTH-214	1.07E-02	U	1.1E-01	1.1E-01	1.55E-01	pCi/g		0.07	11/8/02 03:23 p		200.0	E901.1
								0.2			g	GER4$1
COBALT-60	1.85E-02	U	3.4E-02	3.4E-02	7.30E-02	pCi/g		0.25	11/8/02 03:23 p		200.0	E901.1
						1.52E-01		(1.1)			g	GER4$1
CESIUM-134	2.03E-02	U	4.1E-02	4.1E-02	7.99E-02	pCi/g		0.25	11/8/02 03:23 p		200.0	E901.1
						1.87E-01		0.99			g	GER4$1
CESIUM-137	1.58E-02	U	3.4E-02	3.4E-02	6.51E-02	pCi/g		0.24	11/8/02 03:23 p		200.0	E901.1
						3.16E-01		0.94			g	GER4$1
EUROPIUM-152	-4.81E-02	U	9.3E-02	9.3E-02	1.59E-01	pCi/g		-0.3	11/8/02 03:23 p		200.0	E901.1
						4.04E-01		-(1.)			g	GER4$1
EUROPIUM-154	1.97E-02	U	8.9E-02	8.9E-02	1.83E-01	pCi/g		0.11	11/8/02 03:23 p		200.0	E901.1
						3.72E-01		0.44			g	GER4$1
EUROPIUM-155	-5.04E-03	U	8.2E-02	8.2E-02	1.47E-01	pCi/g		-0.03	11/8/02 03:23 p		200.0	E901.1
						1.57E+01		-0.12			g	GER4$1
POTASSIUM-40	-8.38E-01	U	7.3E-01	7.3E-01	1.59E+00	pCi/g		-0.53	11/8/02 03:23 p		200.0	E901.1
								-(2.3)			g	GER4$1
MAGNESIUM-54	1.36E-02	U	3.5E-02	3.5E-02	6.77E-02	pCi/g		0.2	11/8/02 03:23 p		200.0	E901.1
						6.96E-01		0.78			g	GER4$1

STL Richland
rpISTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-208 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: FADVP1AA			Report DB ID: FADVP1AB								
STRONTIUM-90	1.16E-02	U	1.9E-02	2.1E-02	3.96E-02	pCi/g	76.02%	0.29	11/25/02 01:57 p		10.0	CMUD
					1.84E-02	6.00E-02		(1.1)			g	GPC2B

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-207 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292207	Work Order: FADVF1AA			Report DB ID: FADVF1AB								
PLUTONIUM-241	7.18E-01	U	3.5E-01	4.2E-01	8.30E-01	pCi/g	66.00%	0.86	11/26/02 05:45 a		2.0	RICHRC5010
					4.03E-01	3.48E+01		(3.4)			g	LSC4

Number of Results: 1

Comments:

STL Richland
rptSTLRichBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-206 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292206	Work Order: FADT91AA			Report DB ID: FADT91AB								
PLUTONIUM-238	0.00E+00	U	0.0E+00	1.2E-02	1.36E-02	pCi/g	65.99%	0.	11/19/02 01:24 p		2.0	RICHRC5010
						1.18E+00		0.			g	ALP130
PLUTONIUM-239/40	5.01E-03	U	1.0E-02	1.0E-02	1.36E-02	pCi/g	65.99%	0.37	11/19/02 01:24 p		2.0	RICHRC5010
						1.07E+00		1.			g	ALP130

Number of Results: 2

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 7:45:00 AM
Lot-Sample No.:	J2J160133-15	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-001F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292219	Work Order: E94QM1AA			Report DB ID: 9E94QM10								
ACTINIUM-228	9.10E-01	U	2.1E-01	2.1E-01	3.40E-01	pCi/g		(2.7)	11/14/02 01:42 p		421.2	E901.1
								(8.7)			g	GER6$1
AG-108M	-7.78E-03	U	2.0E-02	2.0E-02	3.31E-02	pCi/g		-0.24	11/14/02 01:42 p		421.2	E901.1
								-0.79			g	GER6$1
AMERICIUM-241	-1.24E-02	U	7.8E-02	7.8E-02	1.28E-01	pCi/g		-0.1	11/14/02 01:42 p		421.2	E901.1
								-0.32			g	GER6$1
BISMUTH-214	6.15E-01	U	1.3E-01	1.3E-01	1.82E-01	pCi/g		(3.4)	11/14/02 01:42 p		421.2	E901.1
								(9.3)			g	GER6$1
COBALT-60	-1.33E-03	U	2.6E-02	2.6E-02	4.72E-02	pCi/g		-0.03	11/14/02 01:42 p		421.2	E901.1
							1.52E-01	-0.1			g	GER6$1
CESIUM-134	5.62E-02	U	3.4E-02	3.4E-02	6.74E-02	pCi/g		0.83	11/14/02 01:42 p		421.2	E901.1
							1.87E-01	(3.3)			g	GER6$1
CESIUM-137	8.88E-03	U	2.6E-02	2.6E-02	4.72E-02	pCi/g		0.19	11/14/02 01:42 p		421.2	E901.1
							3.16E-01	0.68			g	GER6$1
EUROPIUM-152	-2.01E-02	U	6.5E-02	6.5E-02	1.11E-01	pCi/g		-0.18	11/14/02 01:42 p		421.2	E901.1
							4.04E-01	-0.62			g	GER6$1
EUROPIUM-154	-2.65E-02	U	8.9E-02	8.9E-02	1.56E-01	pCi/g		-0.17	11/14/02 01:42 p		421.2	E901.1
							3.72E-01	-0.59			g	GER6$1
EUROPIUM-155	8.48E-02	U	6.8E-02	6.8E-02	1.20E-01	pCi/g		0.71	11/14/02 01:42 p		421.2	E901.1
							1.57E+01	(2.5)			g	GER6$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 7:45:00 AM
Lot-Sample No.:	J2J160133-15	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-001F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.22E+01		1.8E+00	1.8E+00	3.41E-01	pCi/g		(35.6)	11/14/02 01:42 p		421.2	E901.1
								(13.4)			g	GER6$1
MAGNESIUM-54	-1.47E-03	U	3.5E-02	3.5E-02	6.12E-02	pCi/g		-0.02	11/14/02 01:42 p		421.2	E901.1
							6.96E-01	-0.08			g	GER6$1
NIOBIUM-94	-3.27E-04	U	2.7E-02	2.7E-02	4.71E-02	pCi/g		-0.01	11/14/02 01:42 p		421.2	E901.1
							2.85E-01	-0.02			g	GER6$1
LEAD-212	7.77E-01		1.6E-01	1.6E-01	7.11E-02	pCi/g		(10.9)	11/14/02 01:42 p		421.2	E901.1
								(10.)			g	GER6$1
LEAD-214	7.02E-01		1.6E-01	1.6E-01	8.00E-02	pCi/g		(8.8)	11/14/02 01:42 p		421.2	E901.1
								(8.8)			g	GER6$1
RADIUM-226	6.15E-01	U	1.3E-01	1.3E-01	1.82E-01	pCi/g		(3.4)	11/14/02 01:42 p		421.2	E901.1
								(9.3)			g	GER6$1
THALLIUM-208	2.74E-01	U	6.4E-02	6.4E-02	8.57E-02	pCi/g		(3.2)	11/14/02 01:42 p		421.2	E901.1
								(8.5)			g	GER6$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name: STL Richland
SDG: 21325
Collection Date: 7/13/2002 7:51:00 AM
Lot-Sample No.: J2J160133-16
Report No.: 20980
Received Date: 10/15/2002 2:30:00 PM
Client Sample ID: 9528-0003-002F
COC No.:
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94QP1AA			Report DB ID: 9E94QP10								
ACTINIUM-228	7.61E-01		2.1E-01	2.1E-01	1.58E-01	pCi/g		(4.8)	11/9/02 11:05 a		395.3	E901.1
								(7.4)			g	GER5$1
AG-108M	1.26E-02	U	2.2E-02	2.2E-02	3.92E-02	pCi/g		0.32	11/9/02 11:05 a		395.3	E901.1
								(1.2)			g	GER5$1
AMERICIUM-241	2.47E-02	U	5.4E-02	5.4E-02	8.42E-02	pCi/g		0.29	11/9/02 11:05 a		395.3	E901.1
								0.92			g	GER5$1
BISMUTH-214	5.52E-01	U	1.3E-01	1.3E-01	1.90E-01	pCi/g		(2.9)	11/9/02 11:05 a		395.3	E901.1
								(8.6)			g	GER5$1
COBALT-60	5.13E-03	U	2.5E-02	2.5E-02	4.72E-02	pCi/g		0.11	11/9/02 11:05 a		395.3	E901.1
							1.52E-01	0.42			g	GER5$1
CESIUM-134	4.77E-02	U	3.6E-02	3.6E-02	6.90E-02	pCi/g		0.69	11/9/02 11:05 a		395.3	E901.1
							1.87E-01	(2.7)			g	GER5$1
CESIUM-137	2.27E-02	U	2.9E-02	2.9E-02	5.44E-02	pCi/g		0.42	11/9/02 11:05 a		395.3	E901.1
							3.16E-01	(1.6)			g	GER5$1
EUROPIUM-152	-4.78E-02	U	6.6E-02	6.6E-02	1.11E-01	pCi/g		-0.43	11/9/02 11:05 a		395.3	E901.1
							4.04E-01	-(1.4)			g	GER5$1
EUROPIUM-154	7.44E-02	U	8.4E-02	8.4E-02	1.68E-01	pCi/g		0.44	11/9/02 11:05 a		395.3	E901.1
							3.72E-01	(1.8)			g	GER5$1
EUROPIUM-155	2.93E-02	U	7.0E-02	7.0E-02	1.21E-01	pCi/g		0.24	11/9/02 11:05 a		395.3	E901.1
							1.57E+01	0.83			g	GER5$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC/MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 7:51:00 AM
Lot-Sample No.:	J2J160133-16	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-002F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.03E+01		1.6E+00	1.6E+00	4.13E-01	pCi/g		*(24.9)*	11/9/02 11:05 a		395.3	E901.1
								(13.)			g	GER5$1
MAGNESIUM-54	-8.66E-03	U	3.3E-02	3.3E-02	5.71E-02	pCi/g		*-0.15*	11/9/02 11:05 a		395.3	E901.1
							6.96E-01	*-0.52*			g	GER5$1
NIOBIUM-94	-1.72E-02	U	2.3E-02	2.3E-02	3.87E-02	pCi/g		*-0.44*	11/9/02 11:05 a		395.3	E901.1
							2.85E-01	*-(1.5)*			g	GER5$1
LEAD-212	7.18E-01		1.5E-01	1.5E-01	8.98E-02	pCi/g		*(8.)*	11/9/02 11:05 a		395.3	E901.1
								(9.9)			g	GER5$1
LEAD-214	6.13E-01		1.4E-01	1.4E-01	8.65E-02	pCi/g		*(7.1)*	11/9/02 11:05 a		395.3	E901.1
								(8.6)			g	GER5$1
RADIUM-226	5.52E-01		1.3E-01	1.3E-01	8.36E-02	pCi/g		*(6.6)*	11/9/02 11:05 a		395.3	E901.1
								(8.6)			g	GER5$1
THALLIUM-208	2.88E-01		6.6E-02	6.6E-02	3.92E-02	pCi/g		*(7.3)*	11/9/02 11:05 a		395.3	E901.1
								(8.8)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

Date: 19-Nov-02

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 7:51:00 AM
Lot-Sample No.:	J2J160133-16	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-002F DUP	COC No. :		Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94QP1AC			Report DB ID: E94QP1CR		Orig Sa DB ID:						
ACTINIUM-228	7.52E-01		1.9E-01	1.9E-01	1.42E-01	pCi/g		(5.3)	11/9/02 12:50 p		394.7	E901.1
	7.61E-01	RER	0.1					(7.9)			g	GER5$1
AG-108M	-9.45E-03	U	2.2E-02	2.2E-02	3.71E-02	pCi/g		-0.25	11/9/02 12:50 p		394.7	E901.1
	1.26E-02	U RER	1.4					-0.86			g	GER5$1
AMERICIUM-241	8.57E-03	U	5.5E-02	5.5E-02	8.21E-02	pCi/g		0.1	11/9/02 12:50 p		394.7	E901.1
	2.47E-02	U RER	0.4					0.31			g	GER5$1
BISMUTH-214	6.15E-01	U	1.3E-01	1.3E-01	1.96E-01	pCi/g		(3.1)	11/9/02 12:50 p		394.7	E901.1
	5.52E-01	U RER	0.7					(9.7)			g	GER5$1
COBALT-60	-5.97E-03	U	2.6E-02	2.6E-02	4.66E-02	pCi/g		-0.13	11/9/02 12:50 p		394.7	E901.1
	5.13E-03	U RER	0.6			1.52E-01		-0.46			g	GER5$1
CESIUM-134	3.80E-02	U	3.5E-02	3.5E-02	6.64E-02	pCi/g		0.57	11/9/02 12:50 p		394.7	E901.1
	4.77E-02	U RER	0.4			1.87E-01		(2.2)			g	GER5$1
CESIUM-137	-5.14E-03	U	2.7E-02	2.7E-02	4.70E-02	pCi/g		-0.11	11/9/02 12:50 p		394.7	E901.1
	2.27E-02	U RER	1.4			3.16E-01		-0.38			g	GER5$1
EUROPIUM-152	-2.60E-02	U	7.9E-02	7.9E-02	1.18E-01	pCi/g		-0.22	11/9/02 12:50 p		394.7	E901.1
	-4.78E-02	U RER	0.4			4.04E-01		-0.66			g	GER5$1
EUROPIUM-154	4.04E-02	U	9.1E-02	9.1E-02	1.73E-01	pCi/g		0.23	11/9/02 12:50 p		394.7	E901.1
	7.44E-02	U RER	0.5			3.72E-01		0.89			g	GER5$1
EUROPIUM-155	1.36E-02	U	6.8E-02	6.8E-02	1.16E-01	pCi/g		0.12	11/9/02 12:50 p		394.7	E901.1
	2.93E-02	U RER	0.3			1.57E+01		0.4			g	GER5$1
POTASSIUM-40	1.10E+01		1.7E+00	1.7E+00	3.23E-01	pCi/g		(34.)	11/9/02 12:50 p		394.7	E901.1
	1.03E+01	RER	0.6					(13.2)			g	GER5$1

STL Richland
rptSTLRchDupV3.9 6 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

Date: 19-Nov-02

DUPLICATE RESULTS

Lab Name: STL Richland | SDG: 21325 | Collection Date: 7/13/2002 7:51:00 AM

Lot-Sample No.: J2J160133-16 | Report No.: 20980 | Received Date: 10/15/2002 2:30:00 PM

Client Sample ID: 9528-0003-002F DUP | COC No.: | Matrix: SOIL

Parameter	Result, Orig Rst	Qual		Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
MAGNESIUM-54	8.35E-03	U		3.5E-02	3.5E-02	6.23E-02	pCi/g		0.13	11/9/02 12:50 p		394.7	E901.1
	-8.66E-03	U	RER	0.7			6.96E-01		0.48			g	GER5$1
NIOBIUM-94	-1.80E-02	U		2.3E-02	2.3E-02	3.84E-02	pCi/g		-0.47	11/9/02 12:50 p		394.7	E901.1
	-1.72E-02	U	RER	0.1			2.85E-01		-(1.6)			g	GER5$1
LEAD-212	6.47E-01			1.4E-01	1.4E-01	9.37E-02	pCi/g		(6.9)	11/9/02 12:50 p		394.7	E901.1
	7.18E-01		RER	0.7					(9.3)			g	GER5$1
LEAD-214	7.19E-01			1.5E-01	1.5E-01	8.47E-02	pCi/g		(8.5)	11/9/02 12:50 p		394.7	E901.1
	6.13E-01		RER	1.0					(9.6)			g	GER5$1
RADIUM-226	6.15E-01	U		1.3E-01	1.3E-01	1.96E-01	pCi/g		(3.1)	11/9/02 12:50 p		394.7	E901.1
	5.52E-01	U	RER	0.7					(9.7)			g	GER5$1
THALLIUM-208	2.43E-01	U		7.8E-02	7.8E-02	9.38E-02	pCi/g		(2.6)	11/9/02 12:50 p		394.7	E901.1
	2.88E-01	U	RER	0.9					(6.3)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchDupV3.9
6 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:17:00 AM
Lot-Sample No.:	J2J160133-17	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-003F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94QQ1AA			Report DB ID: 9E94QQ10								
ACTINIUM-228	1.04E+00		2.8E-01	2.8E-01	2.13E-01	pCi/g		(4.9)	11/9/02 04:40 p		312.1	E901.1
								(7.5)			g	GER5$1
AG-108M	3.96E-03	U	2.8E-02	2.8E-02	4.91E-02	pCi/g		0.08	11/9/02 04:40 p		312.1	E901.1
								0.28			g	GER5$1
AMERICIUM-241	1.71E-02	U	7.2E-02	7.2E-02	1.15E-01	pCi/g		0.15	11/9/02 04:40 p		312.1	E901.1
								0.48			g	GER5$1
BISMUTH-214	1.14E+00		2.1E-01	2.1E-01	1.02E-01	pCi/g		(11.1)	11/9/02 04:40 p		312.1	E901.1
								(10.9)			g	GER5$1
COBALT-60	4.26E-02	U	3.3E-02	3.3E-02	7.08E-02	pCi/g		0.6	11/9/02 04:40 p		312.1	E901.1
							1.52E-01	(2.6)			g	GER5$1
CESIUM-134	1.06E-01	U	6.0E-02	6.0E-02	9.44E-02	pCi/g		(1.1)	11/9/02 04:40 p		312.1	E901.1
							1.87E-01	(3.6)			g	GER5$1
CESIUM-137	8.15E-02	U	4.7E-02	4.7E-02	8.98E-02	pCi/g		0.91	11/9/02 04:40 p		312.1	E901.1
							3.16E-01	(3.4)			g	GER5$1
EUROPIUM-152	1.94E-02	U	9.3E-02	9.3E-02	1.62E-01	pCi/g		0.12	11/9/02 04:40 p		312.1	E901.1
							4.04E-01	0.42			g	GER5$1
EUROPIUM-154	-1.37E-02	U	1.1E-01	1.1E-01	1.90E-01	pCi/g		-0.07	11/9/02 04:40 p		312.1	E901.1
							3.72E-01	-0.26			g	GER5$1
EUROPIUM-155	1.02E-01	U	9.3E-02	9.3E-02	1.62E-01	pCi/g		0.63	11/9/02 04:40 p		312.1	E901.1
							1.57E+01	(2.2)			g	GER5$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:17:00 AM
Lot-Sample No.:	J2J160133-17	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-003F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.04E+01		1.7E+00	1.7E+00	4.93E-01	pCi/g		*(21.)*	11/9/02 04:40 p		312.1	E901.1
								(12.1)			g	GER5$1
MAGNESIUM-54	1.59E-02	U	4.1E-02	4.1E-02	7.46E-02	pCi/g		*0.21*	11/9/02 04:40 p		312.1	E901.1
							6.96E-01	*0.79*			g	GER5$1
NIOBIUM-94	-3.92E-02	U	3.1E-02	3.1E-02	4.72E-02	pCi/g		*-0.83*	11/9/02 04:40 p		312.1	E901.1
							2.85E-01	*-(2.6)*			g	GER5$1
LEAD-212	1.18E+00		2.3E-01	2.3E-01	1.37E-01	pCi/g		*(8.6)*	11/9/02 04:40 p		312.1	E901.1
								(10.2)			g	GER5$1
LEAD-214	1.06E+00		2.1E-01	2.1E-01	1.11E-01	pCi/g		*(9.5)*	11/9/02 04:40 p		312.1	E901.1
								(10.2)			g	GER5$1
RADIUM-226	1.14E+00		2.1E-01	2.1E-01	1.02E-01	pCi/g		*(11.1)*	11/9/02 04:40 p		312.1	E901.1
								(10.9)			g	GER5$1
THALLIUM-208	3.72E-01		9.2E-02	9.2E-02	6.39E-02	pCi/g		*(5.8)*	11/9/02 04:40 p		312.1	E901.1
								(8.1)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.98 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No.:	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292206	Work Order: E94PK1AG			Report DB ID: 9E94PK10								
PLUTONIUM-238	-9.56E-04	U	1.9E-03	1.9E-03	2.29E-02	pCi/g	70.40%	-0.04	11/19/02 01:23 p		2.02	RICHRC5010
						4.97E-03	1.18E+00	-1.			g	ALP124
PLUTONIUM-239/40	1.91E-02	J	1.9E-02	1.9E-02	1.29E-02	pCi/g	70.40%	(1.5)	11/19/02 01:23 p		2.02	RICHRC5010
							1.07E+00	(2.)			g	ALP124
Batch: 2292207	Work Order: E94PK1AH			Report DB ID: 9E94PK10								
PLUTONIUM-241	6.94E-01	U	3.2E-01	3.9E-01	7.51E-01	pCi/g	70.40%	0.92	11/25/02 12:54 p		2.02	RICHRC5010
						3.65E-01	3.48E+01	(3.6)			g	LSC4
Batch: 2292209	Work Order: E94PK1AN			Report DB ID: 9E94PK10								
ACTINIUM-228	1.33E+00		3.4E-01	3.4E-01	2.30E-01	pCi/g		(5.8)	11/8/02 01:24 p		231.9	E901.1
								(7.8)			g	GER6$1
AG-108M	-8.03E-03	U	3.4E-02	3.4E-02	5.75E-02	pCi/g		-0.14	11/8/02 01:24 p		231.9	E901.1
								-0.48			g	GER6$1
AMERICIUM-241	1.16E-02	U	1.5E-01	1.5E-01	2.19E-01	pCi/g		0.05	11/8/02 01:24 p		231.9	E901.1
								0.15			g	GER6$1
BISMUTH-214	1.35E+00		2.5E-01	2.5E-01	1.26E-01	pCi/g		(10.6)	11/8/02 01:24 p		231.9	E901.1
								(10.6)			g	GER6$1
COBALT-60	-1.37E-02	U	4.2E-02	4.2E-02	7.40E-02	pCi/g		-0.19	11/8/02 01:24 p		231.9	E901.1
							1.52E-01	-0.66			g	GER6$1
CESIUM-134	3.33E-02	U	5.0E-02	5.0E-02	9.44E-02	pCi/g		0.35	11/8/02 01:24 p		231.9	E901.1
							1.87E-01	(1.3)			g	GER6$1

STL Richland
rptSTLRchSample
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No.:	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
CESIUM-137	5.62E-01		1.2E-01	1.2E-01	7.25E-02	pCi/g		(7.8)	11/8/02 01:24 p		231.9	E901.1
							3.16E-01	(9.2)			g	GER6$1
EUROPIUM-152	-3.53E-02	U	1.1E-01	1.1E-01	1.82E-01	pCi/g		-0.19	11/8/02 01:24 p		231.9	E901.1
							4.04E-01	-0.67			g	GER6$1
EUROPIUM-154	-2.13E-01	U	1.4E-01	1.4E-01	2.02E-01	pCi/g		-(1.1)	11/8/02 01:24 p		231.9	E901.1
							3.72E-01	-(3.1)			g	GER6$1
EUROPIUM-155	-1.43E-02	U	1.1E-01	1.1E-01	1.81E-01	pCi/g		-0.08	11/8/02 01:24 p		231.9	E901.1
							1.57E+01	-0.27			g	GER6$1
POTASSIUM-40	1.05E+01		2.0E+00	2.0E+00	7.48E-01	pCi/g		(14.1)	11/8/02 01:24 p		231.9	E901.1
								(10.5)			g	GER6$1
MAGNESIUM-54	4.25E-02	U	5.3E-02	5.3E-02	1.02E-01	pCi/g		0.42	11/8/02 01:24 p		231.9	E901.1
							6.96E-01	(1.6)			g	GER6$1
NIOBIUM-94	8.34E-04	U	3.8E-02	3.8E-02	6.87E-02	pCi/g		0.01	11/8/02 01:24 p		231.9	E901.1
							2.85E-01	0.04			g	GER6$1
LEAD-212	1.29E+00		2.5E-01	2.5E-01	1.07E-01	pCi/g		(12.1)	11/8/02 01:24 p		231.9	E901.1
								(10.4)			g	GER6$1
LEAD-214	1.35E+00		2.8E-01	2.8E-01	1.35E-01	pCi/g		(10.)	11/8/02 01:24 p		231.9	E901.1
								(9.6)			g	GER6$1
RADIUM-226	1.35E+00		2.5E-01	2.5E-01	1.26E-01	pCi/g		(10.6)	11/8/02 01:24 p		231.9	E901.1
								(10.6)			g	GER6$1
THALLIUM-208	4.10E-01		9.1E-02	9.1E-02	5.31E-02	pCi/g		(7.7)	11/8/02 01:24 p		231.9	E901.1
								(9.)			g	GER6$1

STL Richland
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V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: E94PK1AL			Report DB ID: 9E94PK10								
TRITIUM	2.80E-02	U	2.1E-02	2.2E-02	4.85E-02	pCi/g	100.00%	*0.58*	11/2/02 10:30 a		100.5	E906.0
						2.25E-02	1.65E+01	*(2.5)*			g	LSC6
Batch: 2292211	Work Order: E94PK1AD			Report DB ID: 9E94PK10								
TECHNETIUM-99	1.27E-01	U	1.3E-01	2.1E-01	3.09E-01	pCi/g	100.00%	*0.41*	11/6/02 03:39 a		5.0	RICHRC5078
						1.50E-01	5.04E-01	*(1.2)*			g	LSC6
Batch: 2292213	Work Order: E94PK1AC			Report DB ID: 9E94PK10								
CARBON-14	9.07E-03	U	6.1E-02	7.7E-02	1.44E-01	pCi/g	100.00%	*0.06*	11/3/02 05:56 p		5.01	RC5022
						7.06E-02	2.26E-01	*0.24*			g	LSC3
Batch: 2292215	Work Order: E94PK1AM			Report DB ID: 9E94PK10								
AMERICIUM-241	4.79E-03	U	9.6E-03	9.6E-03	1.30E-02	pCi/g	88.70%	*0.37*	11/24/02 07:29 a		2.04	RICHRC5080
							1.03E+00	*1.*			g	ALP127
CURIUM-242	0.00E+00	U	0.0E+00	2.1E-02	2.29E-02	pCi/g	88.70%	*0.*	11/24/02 07:29 a		2.04	RICHRC5080
								0.			g	ALP127
CURIUM-243/244	-1.94E-03	U	2.8E-03	2.8E-03	2.75E-02	pCi/g	88.70%	*-0.07*	11/24/02 07:29 a		2.04	RICHRC5080
						7.15E-03	1.16E+00	*-(1.4)*			g	ALP127
Batch: 2292216	Work Order: E94PK1AJ			Report DB ID: 9E94PK10								
NICKEL-63	2.20E+00	U	3.1E+00	5.9E+00	7.23E+00	pCi/g	74.39%	*0.3*	11/15/02 05:35 p		0.2503	RC5069
						3.52E+00	2.89E+01	*0.75*			g	LSC4
Batch: 2292217	Work Order: E94PK1AK			Report DB ID: 9E94PK10								

STL Richland
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V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
IRON-55	-2.26E+01	U		9.1E+00	1.63E+01	pCi/g	76.73%	*-(1.4)*	11/15/02 03:00 p		0.2503	FBXZ
						7.62E+00	1.10E+02	*-(5.)*			g	LSC7
Batch: 2331323	Work Order: E94PK2AF			Report DB ID: 9E94PK20								
STRONTIUM-90	1.76E-02	U	5.1E-02	5.4E-02	1.06E-01	pCi/g	15.21%	*0.17*	12/25/02 12:12 p		15.01	CMUD
						4.84E-02	6.00E-02	*0.66*			g	GPC4A

Number of Results: 29

Comments:

STL Richland
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V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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STL RICHLAND

FORM II

Date: 30-Dec-02

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F DUP	COC No. :		Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292215	Work Order: E94PK1AP			Report DB ID: E94PK1PR		Orig Sa DB ID: 9E94PK10						
AMERICIUM-241	0.00E+00	U	0.0E+00	1.3E-02	1.47E-02	pCi/g	76.04%	0.	11/24/02 07:29 a		2.02	RICHRC5080
	4.79E-03	U RER	0.6			1.03E+00		0.			g	ALP129
CURIUM-242	0.00E+00	U	0.0E+00	2.4E-02	2.60E-02	pCi/g	76.04%	0.	11/24/02 07:29 a		2.02	RICHRC5080
	0.00E+00	U RER	0.0					0.			g	ALP129
CURIUM-243/244	0.00E+00	U	0.0E+00	1.3E-02	1.49E-02	pCi/g	76.04%	0.	11/24/02 07:29 a		2.02	RICHRC5080
	-1.94E-03	U RER	0.3			1.16E+00		0.			g	ALP129

Number of Results: 3

Comments:

STL Richland
rptSTLRchDupV3.97 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:41:00 AM
Lot-Sample No.:	J2J160133-18	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-005F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94QR1AA			Report DB ID: 9E94QR10								
ACTINIUM-228	7.88E-01	U	2.0E-01	2.0E-01	3.35E-01	pCi/g		(2.4)	11/11/02 06:25 a		408.9	E901.1
								(7.7)			g	GER2$1
AG-108M	1.69E-03	U	2.4E-02	2.4E-02	4.10E-02	pCi/g		0.04	11/11/02 06:25 a		408.9	E901.1
								0.14			g	GER2$1
AMERICIUM-241	-2.46E-01	U	3.0E-01	3.0E-01	4.84E-01	pCi/g		-0.51	11/11/02 06:25 a		408.9	E901.1
								-(1.6)			g	GER2$1
BISMUTH-214	5.97E-01	U	1.6E-01	1.6E-01	1.93E-01	pCi/g		(3.1)	11/11/02 06:25 a		408.9	E901.1
								(7.6)			g	GER2$1
COBALT-60	9.29E-03	U	2.8E-02	2.8E-02	5.26E-02	pCi/g		0.18	11/11/02 06:25 a		408.9	E901.1
							1.52E-01	0.68			g	GER2$1
CESIUM-134	2.85E-02	U	3.4E-02	3.4E-02	6.40E-02	pCi/g		0.44	11/11/02 06:25 a		408.9	E901.1
							1.87E-01	(1.7)			g	GER2$1
CESIUM-137	4.02E-02	U	3.4E-02	3.4E-02	6.28E-02	pCi/g		0.64	11/11/02 06:25 a		408.9	E901.1
							3.16E-01	(2.4)			g	GER2$1
EUROPIUM-152	1.68E-02	U	1.0E-01	1.0E-01	1.39E-01	pCi/g		0.12	11/11/02 06:25 a		408.9	E901.1
							4.04E-01	0.32			g	GER2$1
EUROPIUM-154	3.01E-02	U	8.4E-02	8.4E-02	1.58E-01	pCi/g		0.19	11/11/02 06:25 a		408.9	E901.1
							3.72E-01	0.72			g	GER2$1
EUROPIUM-155	4.79E-02	U	1.2E-01	1.2E-01	2.12E-01	pCi/g		0.23	11/11/02 06:25 a		408.9	E901.1
							1.57E+01	0.78			g	GER2$1

STL Richland
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V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:41:00 AM
Lot-Sample No.:	J2J160133-18	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-005F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	9.91E+00		1.5E+00	1.5E+00	4.15E-01	pCi/g		*(23.9)*	11/11/02 06:25 a		408.9	E901.1
								(13.2)			g	GER2$1
MAGNESIUM-54	1.47E-02	U	3.4E-02	3.4E-02	6.33E-02	pCi/g		*0.23*	11/11/02 06:25 a		408.9	E901.1
							6.96E-01	*0.86*			g	GER2$1
NIOBIUM-94	-4.05E-03	U	2.3E-02	2.3E-02	4.02E-02	pCi/g		*-0.1*	11/11/02 06:25 a		408.9	E901.1
							2.85E-01	*-0.36*			g	GER2$1
LEAD-212	6.96E-01		1.5E-01	1.5E-01	8.24E-02	pCi/g		*(8.5)*	11/11/02 06:25 a		408.9	E901.1
								(9.2)			g	GER2$1
LEAD-214	6.78E-01		1.4E-01	1.4E-01	1.02E-01	pCi/g		*(6.7)*	11/11/02 06:25 a		408.9	E901.1
								(9.4)			g	GER2$1
RADIUM-226	5.98E-01		1.6E-01	1.6E-01	8.98E-02	pCi/g		*(6.7)*	11/11/02 06:25 a		408.9	E901.1
								(7.6)			g	GER2$1
THALLIUM-208	2.44E-01		6.4E-02	6.4E-02	4.48E-02	pCi/g		*(5.4)*	11/11/02 06:25 a		408.9	E901.1
								(7.6)			g	GER2$1

Number of Results: 17

Comments:

STL Richland
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V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/15/2002 10:55:00 AM
Lot-Sample No.:	J2J160133-29	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-006F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94RH1AA			Report DB ID: 9E94RH10								
ACTINIUM-228	1.26E+00		2.6E-01	2.6E-01	1.50E-01	pCi/g		(8.4)	11/11/02 10:08 a		376.6	E901.1
								(9.7)			g	GER8$1
AG-108M	1.05E-03	U	2.0E-02	2.0E-02	3.57E-02	pCi/g		0.03	11/11/02 10:08 a		376.6	E901.1
								0.1			g	GER8$1
AMERICIUM-241	5.62E-03	U	6.7E-02	6.7E-02	1.00E-01	pCi/g		0.06	11/11/02 10:08 a		376.6	E901.1
								0.17			g	GER8$1
BISMUTH-214	9.21E-01		1.7E-01	1.7E-01	8.73E-02	pCi/g		(10.5)	11/11/02 10:08 a		376.6	E901.1
								(11.)			g	GER8$1
COBALT-60	1.39E-02	U	2.6E-02	2.6E-02	5.17E-02	pCi/g		0.27	11/11/02 10:08 a		376.6	E901.1
							1.52E-01	(1.1)			g	GER8$1
CESIUM-134	6.11E-02	U	3.3E-02	3.3E-02	6.65E-02	pCi/g		0.92	11/11/02 10:08 a		376.6	E901.1
							1.87E-01	(3.7)			g	GER8$1
CESIUM-137	7.17E-02	U	3.5E-02	3.5E-02	6.73E-02	pCi/g		(1.1)	11/11/02 10:08 a		376.6	E901.1
							3.16E-01	(4.1)			g	GER8$1
EUROPIUM-152	-6.61E-02	U	7.2E-02	7.2E-02	1.17E-01	pCi/g		-0.57	11/11/02 10:08 a		376.6	E901.1
							4.04E-01	-(1.8)			g	GER8$1
EUROPIUM-154	-2.76E-02	U	7.9E-02	7.9E-02	1.37E-01	pCi/g		-0.2	11/11/02 10:08 a		376.6	E901.1
							3.72E-01	-0.7			g	GER8$1
EUROPIUM-155	8.95E-02	U	7.9E-02	7.9E-02	1.40E-01	pCi/g		0.64	11/11/02 10:08 a		376.6	E901.1
							1.57E+01	(2.3)			g	GER8$1

STL Richland
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V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/15/2002 10:55:00 AM
Lot-Sample No.:	J2J160133-29	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-006F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.38E+01		2.0E+00	2.0E+00	4.38E-01	pCi/g		*(31.6)*	11/11/02 10:08 a		376.6	E901.1
								(13.9)			g	GER8$1
MAGNESIUM-54	1.45E-03	U	3.7E-02	3.7E-02	6.45E-02	pCi/g		*0.02*	11/11/02 10:08 a		376.6	E901.1
							6.96E-01	*0.08*			g	GER8$1
NIOBIUM-94	4.26E-03	U	2.4E-02	2.4E-02	4.34E-02	pCi/g		*0.1*	11/11/02 10:08 a		376.6	E901.1
							2.85E-01	*0.36*			g	GER8$1
LEAD-212	9.80E-01		1.9E-01	1.9E-01	1.21E-01	pCi/g		*(8.1)*	11/11/02 10:08 a		376.6	E901.1
								(10.6)			g	GER8$1
LEAD-214	9.46E-01		1.9E-01	1.9E-01	8.55E-02	pCi/g		*(11.1)*	11/11/02 10:08 a		376.6	E901.1
								(9.8)			g	GER8$1
RADIUM-226	9.21E-01		1.7E-01	1.7E-01	8.73E-02	pCi/g		*(10.5)*	11/11/02 10:08 a		376.6	E901.1
								(11.)			g	GER8$1
THALLIUM-208	3.94E-01		7.9E-02	7.9E-02	4.61E-02	pCi/g		*(8.6)*	11/11/02 10:08 a		376.6	E901.1
								(10.)			g	GER8$1

Number of Results: 17

Comments:

STL Richland
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V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:40:00 AM
Lot-Sample No.:	J2J160133-19	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-007F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94QW1AA			Report DB ID: 9E94QW10								
ACTINIUM-228	8.80E-01		2.2E-01	2.2E-01	1.41E-01	pCi/g		(6.3)	11/11/02 06:26 a		406.9	E901.1
								(7.8)			g	GER4$1
AG-108M	-1.27E-02	U	2.1E-02	2.1E-02	3.49E-02	pCi/g		-0.36	11/11/02 06:26 a		406.9	E901.1
								-(1.2)			g	GER4$1
AMERICIUM-241	8.28E-03	U	1.5E-01	1.5E-01	2.57E-01	pCi/g		0.03	11/11/02 06:26 a		406.9	E901.1
								0.11			g	GER4$1
BISMUTH-214	6.60E-01		1.4E-01	1.4E-01	8.73E-02	pCi/g		(7.6)	11/11/02 06:26 a		406.9	E901.1
								(9.2)			g	GER4$1
COBALT-60	1.45E-02	U	2.8E-02	2.8E-02	5.45E-02	pCi/g		0.27	11/11/02 06:26 a		406.9	E901.1
							1.52E-01	(1.)			g	GER4$1
CESIUM-134	3.25E-02	U	3.5E-02	3.5E-02	6.57E-02	pCi/g		0.49	11/11/02 06:26 a		406.9	E901.1
							1.87E-01	(1.9)			g	GER4$1
CESIUM-137	1.52E-02	U	2.9E-02	2.9E-02	5.27E-02	pCi/g		0.29	11/11/02 06:26 a		406.9	E901.1
							3.16E-01	(1.1)			g	GER4$1
EUROPIUM-152	-5.08E-02	U	6.9E-02	6.9E-02	1.13E-01	pCi/g		-0.45	11/11/02 06:26 a		406.9	E901.1
							4.04E-01	-(1.5)			g	GER4$1
EUROPIUM-154	-7.16E-02	U	8.6E-02	8.6E-02	1.42E-01	pCi/g		-0.51	11/11/02 06:26 a		406.9	E901.1
							3.72E-01	-(1.7)			g	GER4$1
EUROPIUM-155	-3.49E-02	U	8.1E-02	8.1E-02	1.38E-01	pCi/g		-0.25	11/11/02 06:26 a		406.9	E901.1
							1.57E+01	-0.86			g	GER4$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:40:00 AM
Lot-Sample No.:	J2J160133-19	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-007F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.07E+01		1.7E+00	1.7E+00	3.53E-01	pCi/g		*(30.3)*	11/11/02 06:26 a		406.9	E901.1
								(12.7)			g	GER4$1
MAGNESIUM-54	3.02E-02	U	3.5E-02	3.5E-02	6.63E-02	pCi/g		*0.46*	11/11/02 06:26 a		406.9	E901.1
							6.96E-01	*(1.7)*			g	GER4$1
NIOBIUM-94	-1.62E-02	U	2.4E-02	2.4E-02	3.91E-02	pCi/g		*-0.42*	11/11/02 06:26 a		406.9	E901.1
							2.85E-01	*-(1.4)*			g	GER4$1
LEAD-212	8.61E-01		1.6E-01	1.6E-01	6.62E-02	pCi/g		*(13.)*	11/11/02 06:26 a		406.9	E901.1
								(10.5)			g	GER4$1
LEAD-214	7.10E-01		1.5E-01	1.5E-01	8.27E-02	pCi/g		*(8.6)*	11/11/02 06:26 a		406.9	E901.1
								(9.7)			g	GER4$1
RADIUM-226	6.61E-01		1.4E-01	1.4E-01	8.73E-02	pCi/g		*(7.6)*	11/11/02 06:26 a		406.9	E901.1
								(9.2)			g	GER4$1
THALLIUM-208	2.86E-01		7.1E-02	7.1E-02	4.09E-02	pCi/g		*(7.)*	11/11/02 06:26 a		406.9	E901.1
								(8.)			g	GER4$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:45:00 AM
Lot-Sample No.:	J2J160133-20	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-008F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94QX1AA			Report DB ID: 9E94QX10								
ACTINIUM-228	1.27E+00		3.5E-01	3.5E-01	2.65E-01	pCi/g		(4.8)	11/11/02 06:27 a		250.6	E901.1
								(7.2)			g	GER5$1
AG-108M	-2.90E-02	U	3.6E-02	3.6E-02	5.94E-02	pCi/g		-0.49	11/11/02 06:27 a		250.6	E901.1
								-(1.6)			g	GER5$1
AMERICIUM-241	-2.39E-03	U	7.9E-02	7.9E-02	1.33E-01	pCi/g		-0.02	11/11/02 06:27 a		250.6	E901.1
								-0.06			g	GER5$1
BISMUTH-214	1.34E+00	U	2.4E-01	2.4E-01	3.46E-01	pCi/g		(3.9)	11/11/02 06:27 a		250.6	E901.1
								(11.1)			g	GER5$1
COBALT-60	-5.61E-02	U	4.3E-02	4.3E-02	6.25E-02	pCi/g		-0.9	11/11/02 06:27 a		250.6	E901.1
							1.52E-01	-(2.6)			g	GER5$1
CESIUM-134	8.81E-02	U	6.6E-02	6.6E-02	1.11E-01	pCi/g		0.79	11/11/02 06:27 a		250.6	E901.1
							1.87E-01	(2.7)			g	GER5$1
CESIUM-137	3.66E-01		9.1E-02	9.1E-02	7.38E-02	pCi/g		(5.)	11/11/02 06:27 a		250.6	E901.1
							3.16E-01	(8.1)			g	GER5$1
EUROPIUM-152	-1.59E-02	U	1.1E-01	1.1E-01	1.98E-01	pCi/g		-0.08	11/11/02 06:27 a		250.6	E901.1
							4.04E-01	-0.28			g	GER5$1
EUROPIUM-154	-5.32E-02	U	1.3E-01	1.3E-01	2.25E-01	pCi/g		-0.24	11/11/02 06:27 a		250.6	E901.1
							3.72E-01	-0.82			g	GER5$1
EUROPIUM-155	9.95E-02	U	1.1E-01	1.1E-01	1.89E-01	pCi/g		0.53	11/11/02 06:27 a		250.6	E901.1
							1.57E+01	(1.8)			g	GER5$1

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 8:45:00 AM
Lot-Sample No.:	J2J160133-20	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-008F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.47E+01		2.3E+00	2.3E+00	5.94E-01	pCi/g		(24.8)	11/11/02 06:27 a		250.6	E901.1
								(12.7)			g	GER5$1
MAGNESIUM-54	7.20E-03	U	5.1E-02	5.1E-02	9.16E-02	pCi/g		0.08	11/11/02 06:27 a		250.6	E901.1
							6.96E-01	0.28			g	GER5$1
NIOBIUM-94	-8.08E-06	U	3.7E-02	3.7E-02	6.67E-02	pCi/g		0.	11/11/02 06:27 a		250.6	E901.1
							2.85E-01	0.			g	GER5$1
LEAD-212	1.50E+00		2.8E-01	2.8E-01	1.05E-01	pCi/g		(14.3)	11/11/02 06:27 a		250.6	E901.1
								(10.7)			g	GER5$1
LEAD-214	1.49E+00		2.7E-01	2.7E-01	1.37E-01	pCi/g		(10.9)	11/11/02 06:27 a		250.6	E901.1
								(10.9)			g	GER5$1
RADIUM-226	1.34E+00		2.4E-01	2.4E-01	1.22E-01	pCi/g		(11.)	11/11/02 06:27 a		250.6	E901.1
								(11.1)			g	GER5$1
THALLIUM-208	4.31E-01		1.2E-01	1.2E-01	7.68E-02	pCi/g		(5.6)	11/11/02 06:27 a		250.6	E901.1
								(7.5)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:05:00 AM
Lot-Sample No.:	J2J160133-21	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-009F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q11AA			Report DB ID: 9E94Q110								
ACTINIUM-228	1.36E+00		3.1E-01	3.1E-01	2.14E-01	pCi/g		(6.3)	11/11/02 06:26 a		276.7	E901.1
								(8.9)			g	GER8$1
AG-108M	2.35E-02	U	2.7E-02	2.7E-02	4.97E-02	pCi/g		0.47	11/11/02 06:26 a		276.7	E901.1
								(1.6)			g	GER8$1
AMERICIUM-241	4.15E-02	U	8.5E-02	8.5E-02	1.24E-01	pCi/g		0.33	11/11/02 06:26 a		276.7	E901.1
								0.98			g	GER8$1
BISMUTH-214	1.06E+00		2.2E-01	2.2E-01	1.00E-01	pCi/g		(10.6)	11/11/02 06:26 a		276.7	E901.1
								(9.7)			g	GER8$1
COBALT-60	-2.79E-02	U	3.2E-02	3.2E-02	5.08E-02	pCi/g		-0.55	11/11/02 06:26 a		276.7	E901.1
							1.52E-01	-(1.7)			g	GER8$1
CESIUM-134	6.08E-02	U	4.4E-02	4.4E-02	8.68E-02	pCi/g		0.7	11/11/02 06:26 a		276.7	E901.1
							1.87E-01	(2.8)			g	GER8$1
CESIUM-137	1.60E-01	J	6.2E-02	6.2E-02	6.49E-02	pCi/g		(2.5)	11/11/02 06:26 a		276.7	E901.1
							3.16E-01	(5.2)			g	GER8$1
EUROPIUM-152	5.27E-02	U	9.3E-02	9.3E-02	1.67E-01	pCi/g		0.32	11/11/02 06:26 a		276.7	E901.1
							4.04E-01	(1.1)			g	GER8$1
EUROPIUM-154	1.12E-01	U	1.0E-01	1.0E-01	2.08E-01	pCi/g		0.54	11/11/02 06:26 a		276.7	E901.1
							3.72E-01	(2.2)			g	GER8$1
EUROPIUM-155	1.51E-01	U	1.0E-01	1.0E-01	1.79E-01	pCi/g		0.84	11/11/02 06:26 a		276.7	E901.1
							1.57E+01	(3.)			g	GER8$1

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:05:00 AM
Lot-Sample No.:	J2J160133-21	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-009F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.39E+01		2.1E+00	2.1E+00	4.42E-01	pCi/g		*(31.4)*	11/11/02 06:26 a		276.7	E901.1
								(13.5)			g	GER8$1
MAGNESIUM-54	-7.21E-03	U	4.3E-02	4.3E-02	7.47E-02	pCi/g		*-0.1*	11/11/02 06:26 a		276.7	E901.1
							6.96E-01	*-0.34*			g	GER8$1
NIOBIUM-94	-1.05E-02	U	3.0E-02	3.0E-02	5.14E-02	pCi/g		*-0.2*	11/11/02 06:26 a		276.7	E901.1
							2.85E-01	*-0.71*			g	GER8$1
LEAD-212	1.33E+00		2.4E-01	2.4E-01	8.60E-02	pCi/g		*(15.4)*	11/11/02 06:26 a		276.7	E901.1
								(11.2)			g	GER8$1
LEAD-214	1.30E+00		2.3E-01	2.3E-01	1.08E-01	pCi/g		*(12.)*	11/11/02 06:26 a		276.7	E901.1
								(11.3)			g	GER8$1
RADIUM-226	1.06E+00		2.2E-01	2.2E-01	1.00E-01	pCi/g		*(10.6)*	11/11/02 06:26 a		276.7	E901.1
								(9.7)			g	GER8$1
THALLIUM-208	4.72E-01		9.3E-02	9.3E-02	5.86E-02	pCi/g		*(8.1)*	11/11/02 06:26 a		276.7	E901.1
								(10.1)			g	GER8$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:10:00 AM
Lot-Sample No.:	J2J160133-22	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-010F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q21AA			Report DB ID: 9E94Q210								
ACTINIUM-228	1.07E+00		2.4E-01	2.4E-01	1.83E-01	pCi/g		(5.9)	11/11/02 08:18 a		348.2	E901.1
								(8.8)			g	GER2$1
AG-108M	-3.20E-03	U	2.7E-02	2.7E-02	4.56E-02	pCi/g		-0.07	11/11/02 08:18 a		348.2	E901.1
	:							-0.24			g	GER2$1
AMERICIUM-241	-3.09E-01	U	3.8E-01	3.8E-01	6.08E-01	pCi/g		-0.51	11/11/02 08:18 a		348.2	E901.1
								-(1.6)			g	GER2$1
BISMUTH-214	7.84E-01	U	1.8E-01	1.8E-01	2.42E-01	pCi/g		(3.2)	11/11/02 08:18 a		348.2	E901.1
								(8.8)			g	GER2$1
COBALT-60	2.83E-02	U	3.1E-02	3.1E-02	6.27E-02	pCi/g		0.45	11/11/02 08:18 a		348.2	E901.1
							1.52E-01	(1.8)			g	GER2$1
CESIUM-134	3.72E-02	U	4.1E-02	4.1E-02	7.73E-02	pCi/g		0.48	11/11/02 08:18 a		348.2	E901.1
							1.87E-01	(1.8)			g	GER2$1
CESIUM-137	9.15E-02	U	4.5E-02	4.5E-02	8.50E-02	pCi/g		(1.1)	11/11/02 08:18 a		348.2	E901.1
							3.16E-01	(4.)			g	GER2$1
EUROPIUM-152	-6.04E-02	U	1.4E-01	1.4E-01	1.70E-01	pCi/g		-0.36	11/11/02 08:18 a		348.2	E901.1
							4.04E-01	-0.89			g	GER2$1
EUROPIUM-154	3.36E-02	U	1.1E-01	1.1E-01	2.11E-01	pCi/g		0.16	11/11/02 08:18 a		348.2	E901.1
							3.72E-01	0.59			g	GER2$1
EUROPIUM-155	5.44E-02	U	1.5E-01	1.5E-01	2.54E-01	pCi/g		0.21	11/11/02 08:18 a		348.2	E901.1
							1.57E+01	0.74			g	GER2$1

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:10:00 AM
Lot-Sample No.:	J2J160133-22	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-010F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.16E+01		1.8E+00	1.8E+00	5.02E-01	pCi/g		*(23.2)*	11/11/02 08:18 a		348.2	E901.1
								(13.)			g	GER2$1
MAGNESIUM-54	-3.98E-02	U	4.6E-02	4.6E-02	7.63E-02	pCi/g		*-0.52*	11/11/02 08:18 a		348.2	E901.1
							6.96E-01	*-(1.7)*			g	GER2$1
NIOBIUM-94	-1.04E-02	U	3.2E-02	3.2E-02	5.52E-02	pCi/g		*-0.19*	11/11/02 08:18 a		348.2	E901.1
							2.85E-01	*-0.65*			g	GER2$1
LEAD-212	1.11E+00		2.2E-01	2.2E-01	9.40E-02	pCi/g		*(11.8)*	11/11/02 08:18 a		348.2	E901.1
								(10.)			g	GER2$1
LEAD-214	8.51E-01		1.9E-01	1.9E-01	1.15E-01	pCi/g		*(7.4)*	11/11/02 08:18 a		348.2	E901.1
								(8.7)			g	GER2$1
RADIUM-226	7.84E-01	U	1.8E-01	1.8E-01	2.42E-01	pCi/g		*(3.2)*	11/11/02 08:18 a		348.2	E901.1
								(8.8)			g	GER2$1
THALLIUM-208	3.50E-01	U	7.8E-02	7.8E-02	1.19E-01	pCi/g		*(2.9)*	11/11/02 08:18 a		348.2	E901.1
								(9.)			g	GER2$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:09:00 AM
Lot-Sample No.:	J2J160133-24	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-011F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q51AA			Report DB ID: 9E94Q510								
ACTINIUM-228	9.24E-01		2.2E-01	2.2E-01	1.56E-01	pCi/g		(5.9)	11/11/02 08:19 a		391.6	E901.1
								(8.5)			g	GER5$1
AG-108M	-2.77E-03	U	2.2E-02	2.2E-02	3.87E-02	pCi/g		-0.07	11/11/02 08:19 a		391.6	E901.1
								-0.25			g	GER5$1
AMERICIUM-241	4.83E-02	U	6.0E-02	6.0E-02	9.91E-02	pCi/g		0.49	11/11/02 08:19 a		391.6	E901.1
								(1.6)			g	GER5$1
BISMUTH-214	9.30E-01		1.9E-01	1.9E-01	8.96E-02	pCi/g		(10.4)	11/11/02 08:19 a		391.6	E901.1
								(9.6)			g	GER5$1
COBALT-60	-9.23E-03	U	2.6E-02	2.6E-02	4.52E-02	pCi/g		-0.2	11/11/02 08:19 a		391.6	E901.1
							1.52E-01	-0.72			g	GER5$1
CESIUM-134	5.21E-02	U	3.5E-02	3.5E-02	6.93E-02	pCi/g		0.75	11/11/02 08:19 a		391.6	E901.1
							1.87E-01	(2.9)			g	GER5$1
CESIUM-137	-1.36E-02	U	3.0E-02	3.0E-02	5.06E-02	pCi/g		-0.27	11/11/02 08:19 a		391.6	E901.1
							3.16E-01	-0.91			g	GER5$1
EUROPIUM-152	-7.67E-03	U	7.6E-02	7.6E-02	1.33E-01	pCi/g		-0.06	11/11/02 08:19 a		391.6	E901.1
							4.04E-01	-0.2			g	GER5$1
EUROPIUM-154	-2.72E-04	U	8.1E-02	8.1E-02	1.49E-01	pCi/g		0.	11/11/02 08:19 a		391.6	E901.1
							3.72E-01	-0.01			g	GER5$1
EUROPIUM-155	4.66E-02	U	7.7E-02	7.7E-02	1.34E-01	pCi/g		0.35	11/11/02 08:19 a		391.6	E901.1
							1.57E+01	(1.2)			g	GER5$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:09:00 AM
Lot-Sample No.:	J2J160133-24	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-011F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.02E+01		1.6E+00	1.6E+00	3.28E-01	pCi/g		*(31.1)*	11/11/02 08:19 a		391.6	E901.1
								(13.)			g	GER5$1
MAGNESIUM-54	3.11E-03	U	3.6E-02	3.6E-02	6.30E-02	pCi/g		*0.05*	11/11/02 08:19 a		391.6	E901.1
							6.96E-01	*0.18*			g	GER5$1
NIOBIUM-94	9.05E-03	U	2.4E-02	2.4E-02	4.46E-02	pCi/g		*0.2*	11/11/02 08:19 a		391.6	E901.1
							2.85E-01	*0.77*			g	GER5$1
LEAD-212	9.20E-01		1.7E-01	1.7E-01	7.23E-02	pCi/g		*(12.7)*	11/11/02 08:19 a		391.6	E901.1
								(10.6)			g	GER5$1
LEAD-214	9.31E-01		1.9E-01	1.9E-01	8.91E-02	pCi/g		*(10.4)*	11/11/02 08:19 a		391.6	E901.1
								(10.)			g	GER5$1
RADIUM-226	9.30E-01		1.9E-01	1.9E-01	8.96E-02	pCi/g		*(10.4)*	11/11/02 08:19 a		391.6	E901.1
								(9.6)			g	GER5$1
THALLIUM-208	3.14E-01		6.5E-02	6.5E-02	4.68E-02	pCi/g		*(6.7)*	11/11/02 08:19 a		391.6	E901.1
								(9.7)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name: STL Richland
SDG: 21325
Collection Date: 7/13/2002 9:33:00 AM
Lot-Sample No.: J2J160133-25
Report No.: 20980
Received Date: 10/15/2002 2:30:00 PM
Client Sample ID: 9528-0003-012F
COC No.:
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q61AA			Report DB ID: 9E94Q610								
ACTINIUM-228	9.00E-01		1.8E-01	1.8E-01	1.05E-01	pCi/g		(8.6)	11/11/02 08:19 a		406.1	E901.1
								(9.9)			g	GER8$1
AG-108M	-2.14E-03	U	1.9E-02	1.9E-02	3.23E-02	pCi/g		-0.07	11/11/02 08:19 a		406.1	E901.1
								-0.23			g	GER8$1
AMERICIUM-241	3.43E-02	U	5.8E-02	5.8E-02	8.79E-02	pCi/g		0.39	11/11/02 08:19 a		406.1	E901.1
								(1.2)			g	GER8$1
BISMUTH-214	6.66E-01		1.3E-01	1.3E-01	7.61E-02	pCi/g		(8.7)	11/11/02 08:19 a		406.1	E901.1
								(10.)			g	GER8$1
COBALT-60	1.63E-03	U	2.2E-02	2.2E-02	4.14E-02	pCi/g		0.04	11/11/02 08:19 a		406.1	E901.1
							1.52E-01	0.15			g	GER8$1
CESIUM-134	4.31E-02	U	3.0E-02	3.0E-02	5.88E-02	pCi/g		0.73	11/11/02 08:19 a		406.1	E901.1
							1.87E-01	(2.9)			g	GER8$1
CESIUM-137	1.43E-03	U	2.3E-02	2.3E-02	4.08E-02	pCi/g		0.03	11/11/02 08:19 a		406.1	E901.1
							3.16E-01	0.13			g	GER8$1
EUROPIUM-152	-1.59E-02	U	6.6E-02	6.6E-02	1.12E-01	pCi/g		-0.14	11/11/02 08:19 a		406.1	E901.1
							4.04E-01	-0.48			g	GER8$1
EUROPIUM-154	2.03E-02	U	7.4E-02	7.4E-02	1.39E-01	pCi/g		0.15	11/11/02 08:19 a		406.1	E901.1
							3.72E-01	0.55			g	GER8$1
EUROPIUM-155	2.55E-02	U	7.0E-02	7.0E-02	1.21E-01	pCi/g		0.21	11/11/02 08:19 a		406.1	E901.1
							1.57E+01	0.73			g	GER8$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:33:00 AM
Lot-Sample No.:	J2J160133-25	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-012F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	9.72E+00		1.5E+00	1.5E+00	3.85E-01	pCi/g		(25.2)	11/11/02 08:19 a		406.1	E901.1
								(13.3)			g	GER8$1
MAGNESIUM-54	-1.11E-02	U	2.9E-02	2.9E-02	5.04E-02	pCi/g		-0.22	11/11/02 08:19 a		406.1	E901.1
							6.96E-01	-0.75			g	GER8$1
NIOBIUM-94	2.24E-02	U	2.0E-02	2.0E-02	4.06E-02	pCi/g		0.55	11/11/02 08:19 a		406.1	E901.1
							2.85E-01	(2.2)			g	GER8$1
LEAD-212	7.71E-01		1.5E-01	1.5E-01	7.04E-02	pCi/g		(10.9)	11/11/02 08:19 a		406.1	E901.1
								(10.4)			g	GER8$1
LEAD-214	8.02E-01		1.5E-01	1.5E-01	7.93E-02	pCi/g		(10.1)	11/11/02 08:19 a		406.1	E901.1
								(10.5)			g	GER8$1
RADIUM-226	6.66E-01		1.3E-01	1.3E-01	7.61E-02	pCi/g		(8.7)	11/11/02 08:19 a		406.1	E901.1
								(10.)			g	GER8$1
THALLIUM-208	2.87E-01		6.9E-02	6.9E-02	3.99E-02	pCi/g		(7.2)	11/11/02 08:19 a		406.1	E901.1
								(8.3)			g	GER8$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.98 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:35:00 AM
Lot-Sample No.:	J2J160133-26	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-013F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q81AA			Report DB ID: 9E94Q810								
ACTINIUM-228	9.41E-01	U	2.2E-01	2.2E-01	3.63E-01	pCi/g		(2.6)	11/11/02 10:07 a		412.0	E901.1
								(8.4)			g	GER2$1
AG-108M	1.10E-02	U	2.6E-02	2.6E-02	4.50E-02	pCi/g		0.24	11/11/02 10:07 a		412.0	E901.1
								0.86			g	GER2$1
AMERICIUM-241	-2.84E-02	U	3.5E-01	3.5E-01	5.77E-01	pCi/g		-0.05	11/11/02 10:07 a		412.0	E901.1
								-0.16			g	GER2$1
BISMUTH-214	1.07E+00		1.9E-01	1.9E-01	9.48E-02	pCi/g		(11.3)	11/11/02 10:07 a		412.0	E901.1
								(11.1)			g	GER2$1
COBALT-60	-2.91E-02	U	3.3E-02	3.3E-02	5.45E-02	pCi/g		-0.53	11/11/02 10:07 a		412.0	E901.1
							1.52E-01	-(1.7)			g	GER2$1
CESIUM-134	5.25E-02	U	4.1E-02	4.1E-02	7.69E-02	pCi/g		0.68	11/11/02 10:07 a		412.0	E901.1
							1.87E-01	(2.5)			g	GER2$1
CESIUM-137	-1.12E-02	U	3.2E-02	3.2E-02	5.43E-02	pCi/g		-0.21	11/11/02 10:07 a		412.0	E901.1
							3.16E-01	-0.7			g	GER2$1
EUROPIUM-152	1.15E-01	U	1.3E-01	1.3E-01	1.64E-01	pCi/g		0.7	11/11/02 10:07 a		412.0	E901.1
							4.04E-01	(1.8)			g	GER2$1
EUROPIUM-154	-5.24E-02	U	9.7E-02	9.7E-02	1.65E-01	pCi/g		-0.32	11/11/02 10:07 a		412.0	E901.1
							3.72E-01	-(1.1)			g	GER2$1
EUROPIUM-155	1.45E-01	U	1.4E-01	1.4E-01	2.46E-01	pCi/g		0.59	11/11/02 10:07 a		412.0	E901.1
							1.57E+01	(2.1)			g	GER2$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:35:00 AM
Lot-Sample No.:	J2J160133-26	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-013F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.05E+01		1.6E+00	1.6E+00	4.93E-01	pCi/g		*(21.3)*	11/11/02 10:07 a		412.0	E901.1
								(13.1)			g	GER2$1
MAGNESIUM-54	2.30E-02	U	3.8E-02	3.8E-02	7.07E-02	pCi/g		*0.33*	11/11/02 10:07 a		412.0	E901.1
							6.96E-01	*(1.2)*			g	GER2$1
NIOBIUM-94	-1.44E-02	U	2.7E-02	2.7E-02	4.60E-02	pCi/g		*-0.31*	11/11/02 10:07 a		412.0	E901.1
							2.85E-01	*-(1.1)*			g	GER2$1
LEAD-212	9.18E-01		2.1E-01	2.1E-01	1.07E-01	pCi/g		*(8.6)*	11/11/02 10:07 a		412.0	E901.1
								(8.7)			g	GER2$1
LEAD-214	1.07E+00		2.0E-01	2.0E-01	1.09E-01	pCi/g		*(9.8)*	11/11/02 10:07 a		412.0	E901.1
								(10.5)			g	GER2$1
RADIUM-226	1.07E+00		1.9E-01	1.9E-01	9.48E-02	pCi/g		*(11.3)*	11/11/02 10:07 a		412.0	E901.1
								(11.1)			g	GER2$1
THALLIUM-208	3.35E-01		7.3E-02	7.3E-02	5.15E-02	pCi/g		*(6.5)*	11/11/02 10:07 a		412.0	E901.1
								(9.2)			g	GER2$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 12:25:00 PM
Lot-Sample No.:	J2J160133-27	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-014F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94RA1AA			Report DB ID: 9E94RA10								
ACTINIUM-228	5.31E-01		2.0E-01	2.0E-01	1.61E-01	pCi/g		(3.3)	11/11/02 10:08 a		399.6	E901.1
								(5.4)			g	GER4$1
AG-108M	2.48E-03	U	2.1E-02	2.1E-02	3.75E-02	pCi/g		0.07	11/11/02 10:08 a		399.6	E901.1
								0.23			g	GER4$1
AMERICIUM-241	8.49E-02	U	1.5E-01	1.5E-01	2.60E-01	pCi/g		0.33	11/11/02 10:08 a		399.6	E901.1
								(1.2)			g	GER4$1
BISMUTH-214	6.50E-01	U	1.3E-01	1.3E-01	1.98E-01	pCi/g		(3.3)	11/11/02 10:08 a		399.6	E901.1
								(9.8)			g	GER4$1
COBALT-60	6.82E-02	U	3.6E-02	3.6E-02	7.08E-02	pCi/g		0.96	11/11/02 10:08 a		399.6	E901.1
							1.52E-01	(3.8)			g	GER4$1
CESIUM-134	4.05E-02	U	3.3E-02	3.3E-02	6.39E-02	pCi/g		0.63	11/11/02 10:08 a		399.6	E901.1
							1.87E-01	(2.5)			g	GER4$1
CESIUM-137	1.34E-01	J	6.8E-02	6.8E-02	4.85E-02	pCi/g		(2.8)	11/11/02 10:08 a		399.6	E901.1
							3.16E-01	(4.)			g	GER4$1
EUROPIUM-152	-3.05E-02	U	6.5E-02	6.5E-02	1.12E-01	pCi/g		-0.27	11/11/02 10:08 a		399.6	E901.1
							4.04E-01	-0.93			g	GER4$1
EUROPIUM-154	2.61E-02	U	7.6E-02	7.6E-02	1.46E-01	pCi/g		0.18	11/11/02 10:08 a		399.6	E901.1
							3.72E-01	0.69			g	GER4$1
EUROPIUM-155	5.40E-02	U	8.2E-02	8.2E-02	1.47E-01	pCi/g		0.37	11/11/02 10:08 a		399.6	E901.1
							1.57E+01	(1.3)			g	GER4$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 12:25:00 PM
Lot-Sample No.:	J2J160133-27	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-014F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.08E+01		1.7E+00	1.7E+00	3.03E-01	pCi/g		(35.5)	11/11/02 10:08 a		399.6	E901.1
								(12.6)			g	GER4$1
MAGNESIUM-54	-1.12E-02	U	3.5E-02	3.5E-02	6.03E-02	pCi/g		-0.19	11/11/02 10:08 a		399.6	E901.1
							6.96E-01	-0.64			g	GER4$1
NIOBIUM-94	-2.09E-02	U	2.3E-02	2.3E-02	3.68E-02	pCi/g		-0.57	11/11/02 10:08 a		399.6	E901.1
							2.85E-01	-(1.8)			g	GER4$1
LEAD-212	7.39E-01		1.5E-01	1.5E-01	8.43E-02	pCi/g		(8.8)	11/11/02 10:08 a		399.6	E901.1
								(10.1)			g	GER4$1
LEAD-214	6.45E-01		1.5E-01	1.5E-01	8.06E-02	pCi/g		(8.)	11/11/02 10:08 a		399.6	E901.1
								(8.8)			g	GER4$1
RADIUM-226	6.50E-01		1.3E-01	1.3E-01	7.13E-02	pCi/g		(9.1)	11/11/02 10:08 a		399.6	E901.1
								(9.8)			g	GER4$1
THALLIUM-208	2.66E-01		7.7E-02	7.7E-02	4.24E-02	pCi/g		(6.3)	11/11/02 10:08 a		399.6	E901.1
								(6.9)			g	GER4$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 12:43:00 PM
Lot-Sample No.:	J2J160133-28	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-015F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94RE1AA			Report DB ID: 9E94RE10								
. ACTINIUM-228	5.10E-01		2.1E-01	2.1E-01	2.05E-01	pCi/g		(2.5)	11/11/02 10:09 a		344.9	E901.1
								(4.8)			g	GER5$1
AG-108M	-1.89E-02	U	2.5E-02	2.5E-02	4.05E-02	pCi/g		-0.47	11/11/02 10:09 a		344.9	E901.1
								-(1.5)			g	GER5$1
AMERICIUM-241	2.20E-02	U	5.9E-02	5.9E-02	9.01E-02	pCi/g		0.24	11/11/02 10:09 a		344.9	E901.1
								0.74			g	GER5$1
BISMUTH-214	6.50E-01	U	1.5E-01	1.5E-01	2.12E-01	pCi/g		(3.1)	11/11/02 10:09 a		344.9	E901.1
								(8.6)			g	GER5$1
COBALT-60	-1.07E-03	U	2.8E-02	2.8E-02	5.28E-02	pCi/g		-0.02	11/11/02 10:09 a		344.9	E901.1
							1.52E-01	-0.08			g	GER5$1
CESIUM-134	6.71E-02	U	3.6E-02	3.6E-02	7.36E-02	pCi/g		0.91	11/11/02 10:09 a		344.9	E901.1
							1.87E-01	(3.7)			g	GER5$1
CESIUM-137	1.27E-01	J	6.3E-02	6.3E-02	5.27E-02	pCi/g		(2.4)	11/11/02 10:09 a		344.9	E901.1
							3.16E-01	(4.)			g	GER5$1
EUROPIUM-152	3.95E-02	U	7.9E-02	7.9E-02	1.42E-01	pCi/g		0.28	11/11/02 10:09 a		344.9	E901.1
							4.04E-01	1.			g	GER5$1
EUROPIUM-154	-3.70E-02	U	9.8E-02	9.8E-02	1.72E-01	pCi/g		-0.22	11/11/02 10:09 a		344.9	E901.1
							3.72E-01	-0.75			g	GER5$1
EUROPIUM-155	3.96E-02	U	7.5E-02	7.5E-02	1.30E-01	pCi/g		0.31	11/11/02 10:09 a		344.9	E901.1
							1.57E+01	(1.1)			g	GER5$1

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name: STL Richland
SDG: 21325
Collection Date: 7/13/2002 12:43:00 PM
Lot-Sample No.: J2J160133-28
Report No.: 20980
Received Date: 10/15/2002 2:30:00 PM
Client Sample ID: 9528-0003-015F
COC No.:
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert (2 s)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.10E+01		1.7E+00	1.7E+00	4.32E-01	pCi/g		*(25.5)*	11/11/02 10:09 a		344.9	E901.1
								(12.9)			g	GER5$1
MAGNESIUM-54	-7.66E-03	U	3.4E-02	3.4E-02	5.95E-02	pCi/g		*-0.13*	11/11/02 10:09 a		344.9	E901.1
							6.96E-01	*-0.45*			g	GER5$1
NIOBIUM-94	1.67E-03	U	2.8E-02	2.8E-02	5.18E-02	pCi/g		*0.03*	11/11/02 10:09 a		344.9	E901.1
							2.85E-01	*0.12*			g	GER5$1
LEAD-212	7.28E-01		1.5E-01	1.5E-01	7.32E-02	pCi/g		*(9.9)*	11/11/02 10:09 a		344.9	E901.1
								(10.)			g	GER5$1
LEAD-214	7.42E-01		1.7E-01	1.7E-01	8.69E-02	pCi/g		*(8.5)*	11/11/02 10:09 a		344.9	E901.1
								(8.9)			g	GER5$1
RADIUM-226	6.51E-01		1.5E-01	1.5E-01	8.32E-02	pCi/g		*(7.8)*	11/11/02 10:09 a		344.9	E901.1
								(8.6)			g	GER5$1
THALLIUM-208	2.62E-01	U	8.5E-02	8.5E-02	1.05E-01	pCi/g		*(2.5)*	11/11/02 10:09 a		344.9	E901.1
								(6.1)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

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STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 12:43:00 PM
Lot-Sample No.:	J2J160133-28	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-015F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector

STL Richland
rptSTLRchSample
V3.96 A97

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FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland
SDG: 21324
Collection Date: 7/13/2002 7:49:00 AM
Lot-Sample No.: J2J160129-6
Report No. : 21084
Received Date: 10/15/2002 2:30:00 PM
Client Sample ID: 9528-0003-019F
COC No. :
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292206	Work Order: E94PN1AG			Report DB ID: 9E94PN10								
PLUTONIUM-238	4.57E-03	U	9.1E-03	9.2E-03	1.24E-02	pCi/g	73.45%	0.37	11/19/02 01:23 p		2.01	RICHRC5010
							1.18E+00	1.			g	ALP125
PLUTONIUM-239/40	-9.12E-04	U	1.8E-03	1.8E-03	2.18E-02	pCi/g	73.45%	-0.04	11/19/02 01:23 p		2.01	RICHRC5010
						4.75E-03	1.07E+00	-1.			g	ALP125
Batch: 2292207	Work Order: E94PN1AH			Report DB ID: 9E94PN10								
PLUTONIUM-241	2.80E-01	U	3.0E-01	3.6E-01	7.19E-01	pCi/g	73.40%	0.39	11/25/02 04:16 p		2.01	RICHRC5010
						3.49E-01	3.48E+01	(1.5)			g	LSC4
Batch: 2292209	Work Order: E94PN1AN			Report DB ID: 9E94PN10								
ACTINIUM-228	7.84E-01	U	2.2E-01	2.2E-01	4.10E-01	pCi/g		(1.9)	11/8/02 01:25 p		276.1	E901.1
								(7.2)			g	GER7$1
AG-108M	1.75E-02	U	2.8E-02	2.8E-02	5.12E-02	pCi/g		0.34	11/8/02 01:25 p		276.1	E901.1
								(1.3)			g	GER7$1
AMERICIUM-241	3.14E-02	U	1.1E-01	1.1E-01	1.88E-01	pCi/g		0.17	11/8/02 01:25 p		276.1	E901.1
								0.58			g	GER7$1
BISMUTH-214	4.60E-01	U	1.8E-01	1.8E-01	2.37E-01	pCi/g		(1.9)	11/8/02 01:25 p		276.1	E901.1
								(5.1)			g	GER7$1
COBALT-60	1.50E-01	U	5.5E-02	5.5E-02	1.18E-01	pCi/g		(1.3)	11/8/02 01:25 p		276.1	E901.1
							1.52E-01	(5.5)			g	GER7$1
CESIUM-134	1.02E-02	U	4.1E-02	4.1E-02	7.67E-02	pCi/g		0.13	11/8/02 01:25 p		276.1	E901.1
							1.87E-01	0.5			g	GER7$1

STL Richland
rptSTLRchSample
V3.97 A97

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STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 7:49:00 AM
Lot-Sample No.:	J2J160129-6	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-019F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
CESIUM-137	2.91E-01	J	7.5E-02	7.5E-02	6.78E-02	pCi/g		(4.3)	11/8/02 01:25 p		276.1	E901.1
							3.16E-01	(7.8)			g	GER7$1
EUROPIUM-152	-2.92E-02	U	8.6E-02	8.6E-02	1.44E-01	pCi/g		-0.2	11/8/02 01:25 p		276.1	E901.1
							4.04E-01	-0.68			g	GER7$1
EUROPIUM-154	1.58E-02	U	1.1E-01	1.1E-01	2.08E-01	pCi/g		0.08	11/8/02 01:25 p		276.1	E901.1
							3.72E-01	0.28			g	GER7$1
EUROPIUM-155	1.09E-01	U	9.0E-02	9.0E-02	1.66E-01	pCi/g		0.66	11/8/02 01:25 p		276.1	E901.1
							1.57E+01	(2.4)			g	GER7$1
POTASSIUM-40	1.28E+01		2.0E+00	2.0E+00	4.05E-01	pCi/g		(31.5)	11/8/02 01:25 p		276.1	E901.1
								(12.7)			g	GER7$1
MAGNESIUM-54	-8.74E-03	U	4.0E-02	4.0E-02	7.16E-02	pCi/g		-0.12	11/8/02 01:25 p		276.1	E901.1
							6.96E-01	-0.43			g	GER7$1
NIOBIUM-94	1.30E-02	U	3.1E-02	3.1E-02	5.92E-02	pCi/g		0.22	11/8/02 01:25 p		276.1	E901.1
							2.85E-01	0.84			g	GER7$1
LEAD-212	5.75E-01		1.5E-01	1.5E-01	1.09E-01	pCi/g		(5.3)	11/8/02 01:25 p		276.1	E901.1
								(7.9)			g	GER7$1
LEAD-214	3.27E-01		2.0E-01	2.0E-01	1.11E-01	pCi/g		(2.9)	11/8/02 01:25 p		276.1	E901.1
								(3.2)			g	GER7$1
RADIUM-226	4.60E-01	U	1.8E-01	1.8E-01	2.37E-01	pCi/g		(1.9)	11/8/02 01:25 p		276.1	E901.1
								(5.1)			g	GER7$1
THALLIUM-208	2.75E-01	U	7.8E-02	7.8E-02	1.17E-01	pCi/g		(2.4)	11/8/02 01:25 p		276.1	E901.1
								(7.)			g	GER7$1

STL Richland
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V3.97 A97

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FORM I
SAMPLE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland | SDG: 21324 | Collection Date: 7/13/2002 7:49:00 AM
Lot-Sample No.: J2J160129-6 | Report No.: 21084 | Received Date: 10/15/2002 2:30:00 PM
Client Sample ID: 9528-0003-019F | COC No.: | Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: E94PN1AL			Report DB ID: 9E94PN10								
TRITIUM	6.05E-02	U	3.4E-02	3.6E-02	7.95E-02	pCi/g	100.00%	0.76	11/2/02 11:12 a		100.5	E906.0
						3.69E-02	1.65E+01	(3.4)			g	LSC6
Batch: 2292211	Work Order: E94PN1AD			Report DB ID: 9E94PN10								
TECHNETIUM-99	5.33E-02	U	1.3E-01	2.1E-01	3.09E-01	pCi/g	100.00%	0.17	11/6/02 04:41 a		5.0	RICHRC5078
						1.50E-01	5.04E-01	0.52			g	LSC6
Batch: 2292213	Work Order: E94PN1AC			Report DB ID: 9E94PN10								
CARBON-14	-3.34E-02	U	6.0E-02	7.6E-02	1.44E-01	pCi/g	100.00%	-0.23	11/3/02 09:18 p		5.005	RC5022
						7.07E-02	2.26E-01	-0.88			g	LSC3
Batch: 2292215	Work Order: E94PN1AM			Report DB ID: 9E94PN10								
AMERICIUM-241	2.00E-02	U	2.1E-02	2.1E-02	2.52E-02	pCi/g	79.23%	0.79	11/24/02 07:30 a		1.99	RICHRC5080
						5.48E-03	1.03E+00	(1.9)			g	ALP130
CURIUM-242	0.00E+00	U	0.0E+00	2.3E-02	2.52E-02	pCi/g	79.23%	0.	11/24/02 07:30 a		1.99	RICHRC5080
								0.			g	ALP130
CURIUM-243/244	0.00E+00	U	0.0E+00	1.3E-02	1.45E-02	pCi/g	79.23%	0.	11/24/02 07:30 a		1.99	RICHRC5080
							1.16E+00	0.			g	ALP130
Batch: 2292216	Work Order: E94PN1AJ			Report DB ID: 9E94PN10								
NICKEL-63	2.28E+00	U	2.9E+00	5.6E+00	6.96E+00	pCi/g	77.20%	0.33	11/15/02 07:17 p		0.2518	RC5069
						3.39E+00	2.89E+01	0.81			g	LSC4
Batch: 2292217	Work Order: E94PN1AK			Report DB ID: 9E94PN10								

STL Richland
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V3.97 A97

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STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 7:49:00 AM
Lot-Sample No.:	J2J160129-6	Report No.:	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-019F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
IRON-55	3.78E+01	J		1.7E+01	2.66E+01	pCi/g	60.39%	*(1.4)*	11/15/02 03:00 p		0.2519	FBXZ
						1.24E+01	1.10E+02	*(4.5)*			g	LSC7
Batch: 2331323	Work Order: E94PN2AF			Report DB ID: 9E94PN20								
STRONTIUM-90	4.70E-02	J	2.3E-02	2.6E-02	3.88E-02	pCi/g	48.12%	*(1.2)*	12/25/02 12:12 p		15.01	CMUD
						1.79E-02	6.00E-02	*(3.6)*			g	GPC4B

Number of Results: 29

Comments:

STL Richland
rptSTLRchSample
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

Date: 30-Dec-02

DUPLICATE RESULTS

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 7:49:00 AM
Lot-Sample No.:	J2J160129-6	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-019F DUP	COC No. :		Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order: E94PN1AQ			Report DB ID: E94PN1QR		Orig Sa DB ID: 9E94PN10						
NICKEL-63	1.79E+00	U	2.5E+00	4.9E+00	6.01E+00	pCi/g	88.96%	0.3	11/15/02 08:59 p		0.2519	RC5069
	2.28E+00	U RER	0.1			2.89E+01		0.73			g	LSC4
Batch: 2292217	Work Order: E94PN1AT			Report DB ID: E94PN1TR		Orig Sa DB ID: 9E94PN10						
IRON-55	-1.08E+01	U		1.9E+01	3.75E+01	pCi/g	42.63%	-0.29	11/15/02 03:00 p		0.252	FBXZ
	3.78E+01	J RER	3.8			1.10E+02		-(1.1)			g	LSC7

Number of Results: 2

Comments:

STL Richland
rptSTLRichDupV3.9
7 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/15/2002 2:00:00 PM
Lot-Sample No.:	J2J160133-30	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-0023F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94RJ1AA			Report DB ID: 9E94RJ10								
ACTINIUM-228	1.02E+00		2.9E-01	2.9E-01	2.12E-01	pCi/g		(4.8)	11/11/02 11:56 a		263.4	E901.1
								(7.)			g	GER5$1
AG-108M	2.40E-02	U	3.2E-02	3.2E-02	5.95E-02	pCi/g		0.4	11/11/02 11:56 a		263.4	E901.1
								(1.5)			g	GER5$1
AMERICIUM-241	3.79E-02	U	7.7E-02	7.7E-02	1.26E-01	pCi/g		0.3	11/11/02 11:56 a		263.4	E901.1
								0.98			g	GER5$1
BISMUTH-214	1.09E+00		2.2E-01	2.2E-01	1.15E-01	pCi/g		(9.4)	11/11/02 11:56 a		263.4	E901.1
								(9.9)			g	GER5$1
COBALT-60	-4.13E-03	U	3.9E-02	3.9E-02	7.07E-02	pCi/g		-0.06	11/11/02 11:56 a		263.4	E901.1
							1.52E-01	-0.21			g	GER5$1
CESIUM-134	3.53E-02	U	4.8E-02	4.8E-02	9.11E-02	pCi/g		0.39	11/11/02 11:56 a		263.4	E901.1
							1.87E-01	(1.5)			g	GER5$1
CESIUM-137	6.28E-01		1.4E-01	1.4E-01	6.51E-02	pCi/g		(9.6)	11/11/02 11:56 a		263.4	E901.1
							3.16E-01	(8.9)			g	GER5$1
EUROPIUM-152	-8.92E-02	U	1.0E-01	1.0E-01	1.71E-01	pCi/g		-0.52	11/11/02 11:56 a		263.4	E901.1
							4.04E-01	-(1.7)			g	GER5$1
EUROPIUM-154	-1.59E-02	U	1.2E-01	1.2E-01	2.22E-01	pCi/g		-0.07	11/11/02 11:56 a		263.4	E901.1
							3.72E-01	-0.26			g	GER5$1
EUROPIUM-155	7.41E-02	U	1.0E-01	1.0E-01	1.76E-01	pCi/g		0.42	11/11/02 11:56 a		263.4	E901.1
							1.57E+01	(1.5)			g	GER5$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/15/2002 2:00:00 PM
Lot-Sample No.:	J2J160133-30	Report No. :	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-0023F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.13E+01		2.0E+00	2.0E+00	4.87E-01	pCi/g		*(23.3)*	11/11/02 11:56 a		263.4	E901.1
								(11.6)			g	GER5$1
MAGNESIUM-54	8.79E-03	U	5.1E-02	5.1E-02	9.19E-02	pCi/g		*0.1*	11/11/02 11:56 a		263.4	E901.1
							6.96E-01	*0.34*			g	GER5$1
NIOBIUM-94	-3.02E-02	U	3.2E-02	3.2E-02	5.14E-02	pCi/g		*-0.59*	11/11/02 11:56 a		263.4	E901.1
							2.85E-01	*-(1.9)*			g	GER5$1
LEAD-212	1.20E+00		2.3E-01	2.3E-01	9.40E-02	pCi/g		*(12.7)*	11/11/02 11:56 a		263.4	E901.1
								(10.4)			g	GER5$1
LEAD-214	1.24E+00		2.4E-01	2.4E-01	1.34E-01	pCi/g		*(9.3)*	11/11/02 11:56 a		263.4	E901.1
								(10.3)			g	GER5$1
RADIUM-226	1.09E+00		2.2E-01	2.2E-01	1.15E-01	pCi/g		*(9.4)*	11/11/02 11:56 a		263.4	E901.1
								(9.9)			g	GER5$1
THALLIUM-208	3.77E-01	U	9.3E-02	9.3E-02	1.37E-01	pCi/g		*(2.7)*	11/11/02 11:56 a		263.4	E901.1
								(8.1)			g	GER5$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II
BLANK RESULTS

Date: 19-Nov-02

Lab Name: STL Richland SDG: 21325

Lot-Sample No.: J2J190000-219 Report No.: 20980 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292219	Work Order: FAD0F1AA			Report DB ID: FAD0F1AB								
ACTINIUM-228	3.98E-02	U	7.9E-02	7.9E-02	1.69E-01	pCi/g		0.24	11/14/02 01:43 p		200.0	E901.1
								(1.)			g	GER8$1
AG-108M	-1.75E-02	U	2.3E-02	2.3E-02	3.78E-02	pCi/g		-0.46	11/14/02 01:43 p		200.0	E901.1
								-(1.5)			g	GER8$1
AMERICIUM-241	-1.81E-02	U	3.5E-02	3.5E-02	5.78E-02	pCi/g		-0.31	11/14/02 01:43 p		200.0	E901.1
								-(1.)			g	GER8$1
BISMUTH-214	2.89E-02	U	5.9E-02	5.9E-02	1.18E-01	pCi/g		0.24	11/14/02 01:43 p		200.0	E901.1
								0.98			g	GER8$1
COBALT-60	-7.80E-03	U	2.1E-02	2.1E-02	3.92E-02	pCi/g		-0.2	11/14/02 01:43 p		200.0	E901.1
						1.52E-01		-0.74			g	GER8$1
CESIUM-134	-7.40E-04	U	2.7E-02	2.7E-02	5.20E-02	pCi/g		-0.01	11/14/02 01:43 p		200.0	E901.1
						1.87E-01		-0.05			g	GER8$1
CESIUM-137	5.14E-03	U	2.0E-02	2.0E-02	4.10E-02	pCi/g		0.13	11/14/02 01:43 p		200.0	E901.1
						3.16E-01		0.52			g	GER8$1
EUROPIUM-152	4.23E-02	U	7.0E-02	7.0E-02	1.35E-01	pCi/g		0.31	11/14/02 01:43 p		200.0	E901.1
						4.04E-01		(1.2)			g	GER8$1
EUROPIUM-154	1.40E-02	U	6.7E-02	6.7E-02	1.44E-01	pCi/g		0.1	11/14/02 01:43 p		200.0	E901.1
						3.72E-01		0.41			g	GER8$1
EUROPIUM-155	1.98E-02	U	4.7E-02	4.7E-02	8.86E-02	pCi/g		0.22	11/14/02 01:43 p		200.0	E901.1
						1.57E+01		0.84			g	GER8$1
POTASSIUM-40	1.06E-01	U	4.0E-01	4.0E-01	8.67E-01	pCi/g		0.12	11/14/02 01:43 p		200.0	E901.1
								0.53			g	GER8$1
MAGNESIUM-54	2.60E-03	U	2.5E-02	2.5E-02	4.93E-02	pCi/g		0.05	11/14/02 01:43 p		200.0	E901.1
						6.96E-01		0.2			g	GER8$1

STL Richland
rptSTLRchBlank
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 19-Nov-02

Lab Name: STL Richland SDG: 21325

Lot-Sample No.: J2J190000-219 Report No.: 20980 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
NIOBIUM-94	1.36E-02	U	2.4E-02	2.4E-02	5.04E-02	pCi/g		0.27	11/14/02 01:43 p		200.0	E901.1
						2.85E-01		(1.1)			g	GER8$1
LEAD-212	6.82E-04	U	3.8E-02	3.8E-02	6.93E-02	pCi/g		0.01	11/14/02 01:43 p		200.0	E901.1
								0.04			g	GER8$1
LEAD-214	-3.12E-02	U	5.2E-02	5.2E-02	8.62E-02	pCi/g		-0.36	11/14/02 01:43 p		200.0	E901.1
								-(1.2)			g	GER8$1
RADIUM-226	2.08E-02	U	6.0E-02	6.0E-02	1.18E-01	pCi/g		0.18	11/14/02 01:43 p		200.0	E901.1
								0.7			g	GER8$1
THALLIUM-208	2.17E-02	U	2.2E-02	2.2E-02	4.87E-02	pCi/g		0.45	11/14/02 01:43 p		200.0	E901.1
								(2.)			g	GER8$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchBlank
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II
BLANK RESULTS

Date: 19-Nov-02

Lab Name: STL Richland SDG: 21325

Lot-Sample No.: J2J190000-220 Report No.: 20980 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: FAD0G1AA			Report DB ID: FAD0G1AB								
ACTINIUM-228	4.72E-02	U	1.4E-01	1.4E-01	2.66E-01	pCi/g		0.18	11/11/02 11:56 a		200.0	E901.1
								0.68			g	GER2$1
AG-108M	7.38E-03	U	2.8E-02	2.8E-02	5.13E-02	pCi/g		0.14	11/11/02 11:56 a		200.0	E901.1
								0.53			g	GER2$1
AMERICIUM-241	-2.25E-01	U	3.4E-01	3.4E-01	5.59E-01	pCi/g		-0.4	11/11/02 11:56 a		200.0	E901.1
								-(1.3)			g	GER2$1
BISMUTH-214	-2.78E-02	U	7.9E-02	7.9E-02	1.40E-01	pCi/g		-0.2	11/11/02 11:56 a		200.0	E901.1
								-0.71			g	GER2$1
COBALT-60	1.36E-02	U	3.8E-02	3.8E-02	7.65E-02	pCi/g		0.18	11/11/02 11:56 a		200.0	E901.1
						1.52E-01		0.72			g	GER2$1
CESIUM-134	1.49E-02	U	3.6E-02	3.6E-02	7.06E-02	pCi/g		0.21	11/11/02 11:56 a		200.0	E901.1
						1.87E-01		0.82			g	GER2$1
CESIUM-137	-2.29E-02	U	3.4E-02	3.4E-02	5.67E-02	pCi/g		-0.4	11/11/02 11:56 a		200.0	E901.1
						3.16E-01		-(1.3)			g	GER2$1
EUROPIUM-152	-6.92E-02	U	9.9E-02	9.9E-02	1.63E-01	pCi/g		-0.42	11/11/02 11:56 a		200.0	E901.1
						4.04E-01		-(1.4)			g	GER2$1
EUROPIUM-154	2.33E-02	U	9.0E-02	9.0E-02	1.85E-01	pCi/g		0.13	11/11/02 11:56 a		200.0	E901.1
						3.72E-01		0.52			g	GER2$1
EUROPIUM-155	-6.03E-02	U	1.2E-01	1.2E-01	2.00E-01	pCi/g		-0.3	11/11/02 11:56 a		200.0	E901.1
						1.57E+01		-(1.)			g	GER2$1
POTASSIUM-40	-4.12E-01	U	7.1E-01	7.1E-01	1.55E+00	pCi/g		-0.27	11/11/02 11:56 a		200.0	E901.1
								-(1.2)			g	GER2$1
MAGNESIUM-54	2.21E-02	U	3.4E-02	3.4E-02	6.88E-02	pCi/g		0.32	11/11/02 11:56 a		200.0	E901.1
						6.96E-01		(1.3)			g	GER2$1

STL Richland
rptSTLRchBlank
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 19-Nov-02

Lab Name: STL Richland SDG: 21325

Lot-Sample No.: J2J190000-220 Report No.: 20980 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
NIOBIUM-94	-1.14E-02	U	3.3E-02	3.3E-02	5.91E-02	pCi/g		-0.19	11/11/02 11:56 a		200.0	E901.1
						2.85E-01		-0.68			g	GER2$1
LEAD-212	4.20E-04	U	6.5E-02	6.5E-02	1.13E-01	pCi/g		0.	11/11/02 11:56 a		200.0	E901.1
								0.01			g	GER2$1
LEAD-214	-1.13E-02	U	6.8E-02	6.8E-02	1.19E-01	pCi/g		-0.09	11/11/02 11:56 a		200.0	E901.1
								-0.33			g	GER2$1
RADIUM-226	-2.78E-02	U	7.9E-02	7.9E-02	1.40E-01	pCi/g		-0.2	11/11/02 11:56 a		200.0	E901.1
								-0.71			g	GER2$1
THALLIUM-208	-1.74E-02	U	4.3E-02	4.3E-02	7.59E-02	pCi/g		-0.23	11/11/02 11:56 a		200.0	E901.1
								-0.82			g	GER2$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchBlank
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

LCS RESULTS

Date: 19-Nov-02

Lab Name: STL Richland SDG: 21325

Lot-Sample No.: J2J190000-219 Report No.: 20980 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292219	Work Order: FAD0F1AC			Report DB ID: FAD0F1CS									
CESIUM-137	1.28E+00		2.0E-01	2.0E-01	5.32E-02	pCi/g		1.02E+00	3.4E-02	125.68%	11/14/02 02:27 p	200.0	E901.1
							Rec Limits:	70.	130.	0.3		g	GER4$1

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.96 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 19-Nov-02

Lab Name: STL Richland SDG: 21325

Lot-Sample No.: J2J190000-220 Report No.: 20980 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: FAD0G1AC			Report DB ID: FAD0G1CS									
CESIUM-137	1.22E+00		1.9E-01	1.9E-01	6.81E-02	pCi/g		1.02E+00	3.4E-02	119.70%	11/11/02 11:57 a	200.0	E901.1
							Rec Limits:	70.	130.	0.2		g	GER4$1

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.98 A97

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-206 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292206	Work Order: FADT91AA			Report DB ID: FADT91AB								
PLUTONIUM-238	0.00E+00	U	0.0E+00	1.2E-02	1.36E-02	pCi/g	65.99%	0.	11/19/02 01:24 p		2.0	RICHRC5010
						1.18E+00		0.			g	ALP130
PLUTONIUM-239/40	5.01E-03	U	1.0E-02	1.0E-02	1.36E-02	pCi/g	65.99%	0.37	11/19/02 01:24 p		2.0	RICHRC5010
						1.07E+00		1.			g	ALP130

Number of Results: 2

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II
BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-207 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292207	Work Order:	FADVF1AA		Report DB ID:	FADVF1AB							
PLUTONIUM-241	7.18E-01	U	3.5E-01	4.2E-01	8.30E-01	pCi/g	66.00%	0.86	11/26/02 05:45 a		2.0	RICHRC5010
					4.03E-01	3.48E+01		(3.4)			g	LSC4

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II
BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-208 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: .FADVP1AA			Report DB ID: FADVP1AB								
STRONTIUM-90	1.16E-02	U	1.9E-02	2.1E-02	3.96E-02	pCi/g	76.02%	0.29	11/25/02 01:57 p		10.0	CMUD
					1.84E-02	6.00E-02		(1.1)			g	GPC2B

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II
BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-209 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292209	Work Order: FADV01AA			Report DB ID: FADV01AB								
ACTINIUM-228	-4.76E-03	U	1.3E-01	1.3E-01	2.64E-01	pCi/g		-0.02	11/8/02 03:23 p		200.0	E901.1
								-0.07			g	GER4$1
AG-108M	1.92E-02	U	2.7E-02	2.7E-02	5.25E-02	pCi/g		0.37	11/8/02 03:23 p		200.0	E901.1
								(1.4)			g	GER4$1
AMERICIUM-241	-2.00E-02	U	1.7E-01	1.7E-01	2.96E-01	pCi/g		-0.07	11/8/02 03:23 p		200.0	E901.1
								-0.24			g	GER4$1
BISMUTH-214	1.07E-02	U	1.1E-01	1.1E-01	1.55E-01	pCi/g		0.07	11/8/02 03:23 p		200.0	E901.1
								0.2			g	GER4$1
COBALT-60	1.85E-02	U	3.4E-02	3.4E-02	7.30E-02	pCi/g		0.25	11/8/02 03:23 p		200.0	E901.1
						1.52E-01		(1.1)			g	GER4$1
CESIUM-134	2.03E-02	U	4.1E-02	4.1E-02	7.99E-02	pCi/g		0.25	11/8/02 03:23 p		200.0	E901.1
						1.87E-01		0.99			g	GER4$1
CESIUM-137	1.58E-02	U	3.4E-02	3.4E-02	6.51E-02	pCi/g		0.24	11/8/02 03:23 p		200.0	E901.1
						3.16E-01		0.94			g	GER4$1
EUROPIUM-152	-4.81E-02	U	9.3E-02	9.3E-02	1.59E-01	pCi/g		-0.3	11/8/02 03:23 p		200.0	E901.1
						4.04E-01		-(1.)			g	GER4$1
EUROPIUM-154	1.97E-02	U	8.9E-02	8.9E-02	1.83E-01	pCi/g		0.11	11/8/02 03:23 p		200.0	E901.1
						3.72E-01		0.44			g	GER4$1
EUROPIUM-155	-5.04E-03	U	8.2E-02	8.2E-02	1.47E-01	pCi/g		-0.03	11/8/02 03:23 p		200.0	E901.1
						1.57E+01		-0.12			g	GER4$1
POTASSIUM-40	-8.38E-01	U	7.3E-01	7.3E-01	1.59E+00	pCi/g		-0.53	11/8/02 03:23 p		200.0	E901.1
								-(2.3)			g	GER4$1
MAGNESIUM-54	1.36E-02	U	3.5E-02	3.5E-02	6.77E-02	pCi/g		0.2	11/8/02 03:23 p		200.0	E901.1
						6.96E-01		0.78			g	GER4$1

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-209 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
NIOBIUM-94	1.82E-02	U	3.7E-02	3.7E-02	7.23E-02	pCi/g		0.25	11/8/02 03:23 p		200.0	E901.1
						2.85E-01		0.97			g	GER4$1
LEAD-212	-6.81E-04	U	5.8E-02	5.8E-02	1.06E-01	pCi/g		-0.01	11/8/02 03:23 p		200.0	E901.1
								-0.02			g	GER4$1
LEAD-214	-7.17E-02	U	7.9E-02	7.9E-02	1.39E-01	pCi/g		-0.52	11/8/02 03:23 p		200.0	E901.1
								-(1.8)			g	GER4$1
RADIUM-226	1.07E-02	U	1.1E-01	1.1E-01	1.55E-01	pCi/g		0.07	11/8/02 03:23 p		200.0	E901.1
								0.2			g	GER4$1
THALLIUM-208	-2.06E-02	U	4.1E-02	4.1E-02	7.30E-02	pCi/g		-0.28	11/8/02 03:23 p		200.0	E901.1
								-1.			g	GER4$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-210 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: FADV81AA			Report DB ID: FADV81AB								
TRITIUM	1.65E-01	U	1.3E-01	1.4E-01	3.07E-01	pCi/g	100.00%	0.54	11/2/02 05:36 a		10.0	E906.0
					1.43E-01	1.65E+01		(2.3)			g	LSC6

Number of Results: 1

Comments:

STL Richland
rpISTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-211 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292211	Work Order: FADWM1AA			Report DB ID: FADWM1AB								
TECHNETIUM-99	2.75E-01	U	1.3E-01	2.2E-01	3.10E-01	pCi/g	100.00%	0.89	11/6/02 07:48 a		5.0	RICHRC5078
					1.51E-01	5.04E-01		(2.5)			g	LSC6

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-213 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292213	Work Order:	FADW31AA		Report DB ID:	FADW31AB							
CARBON-14	-8.46E-02	U	5.9E-02	7.5E-02	1.44E-01	pCi/g	100.00%	-0.59	11/2/02 06:18 p		5.0	RC5022
					7.07E-02	2.26E-01		-(2.3)			g	LSC3

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-215 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292215	Work Order:	FADXD1AA		Report DB ID:	FADXD1AB							
AMERICIUM-241	-1.16E-03	U	2.3E-03	2.3E-03	2.77E-02	pCi/g	71.24%	-0.04	11/24/02 11:03 a		2.0	RICHRC5080
					6.02E-03	1.03E+00		-1.			g	ALP45
CURIUM-242	-2.05E-03	U	4.1E-03	4.1E-03	4.90E-02	pCi/g	71.24%	-0.04	11/24/02 11:03 a		2.0	RICHRC5080
					1.06E-02			-1.			g	ALP45
CURIUM-243/244	2.34E-03	U	1.2E-02	1.2E-02	3.70E-02	pCi/g	71.24%	0.06	11/24/02 11:03 a		2.0	RICHRC5080
					1.06E-02	1.16E+00		0.38			g	ALP45

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-216 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order: FADXV1AA			Report DB ID: FADXV1AB								
NICKEL-63	8.86E+00	J	2.8E+00	5.5E+00	6.34E+00	pCi/g	87.06%	(1.4)	11/15/02 09:06 a		0.25	RC5069
					3.09E+00	2.89E+01		(3.2)			g	LSC4

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

STL RICHLAND

FORM II
BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-217 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292217	Work Order:	FADX61AA		Report DB ID:	FADX61AB							
IRON-55	-8.61E+01	U		1.8E+01	1.09E+01	pCi/g	60.82%	-(7.9)	11/15/02 03:00 p		0.25	FBXZ
					4.89E+00	1.10E+02		-(9.5)			g	LSC7

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

BLANK RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2K270000-323 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2331323	Work Order: FD0VH1AA			Report DB ID: FD0VH1AB								
STRONTIUM-90	-1.05E-03	U	1.5E-02	1.5E-02	3.03E-02	pCi/g	65.70%	-0.03	12/25/02 03:42 p		15.0	CMUD
					1.40E-02	6.00E-02		-0.14			g	GPC2B

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-206 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292206	Work Order: FADT91AC			Report DB ID: FADT91CS									
PLUTONIUM-239/40	4.83E-01		1.0E-01	1.3E-01	1.44E-02	pCi/g	63.89%	4.55E-01	2.3E-02	106.18%	11/19/02 01:24 p	2.0	RICHRC5010
							Rec Limits:	70.	130.	0.1		g	ALP131

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-207

Report No.: 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292207	Work Order: FADVF1AC			Report DB ID: FADVF1CS									
PLUTONIUM-241	1.99E+01		7.1E-01	1.4E+00	8.78E-01	pCi/g	63.90%	2.30E+01	1.0E+00	86.38%	11/26/02 09:08 a	2.0	RICHRC5010
							Rec Limits:	70.	130.	-0.1		g	LSC4

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rplSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-208

Report No.: 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: FADVP1AC			Report DB ID: FADVP1CS									
STRONTIUM-90	5.02E-01		4.9E-02	1.1E-01	4.09E-02	pCi/g	74.27%	4.61E-01	9.1E-03	108.85%	11/25/02 01:57 p	10.0	CMUD
							Rec Limits:	70.	130.	0.1		g	GPC2C

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N1330.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-209 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292209	Work Order: FADV01AC			Report DB ID: FADV01CS									
CESIUM-137	1.18E+00		1.9E-01	1.9E-01	6.05E-02	pCi/g		1.01E+00	3.4E-02	116.27%	11/8/02 03:21 p	200.0	E901.1
							Rec Limits:	70.	130.	0.2		g	GER7$1

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-210

Report No.: 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: FADV81AC			Report DB ID: FADV81CS									
TRITIUM	7.14E+00		3.7E-01	4.0E-01	3.12E-01	pCi/g	100.00%	6.89E+00	2.4E-01	103.62%	11/2/02 06:18 a	10.0	E906.0
							Rec Limits:	70.	130.	0.0		g	LSC6

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-211 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292211	Work Order: FADWM1AC			Report DB ID: FADWM1CS									
TECHNETIUM-99	1.18E+01		3.1E-01	9.1E-01	3.11E-01	pCi/g	100.00%	1.36E+01	3.1E-01	86.78%	11/6/02 09:52 a	5.0	RICHRC5078
							Rec Limits:	70.	130.	-0.1		g	LSC6

Number of Results: 1

Comments:

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRichLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-213 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292213	Work Order: FADW31AC			Report DB ID: FADW31CS									
CARBON-14	2.56E+00		9.3E-02	1.5E-01	1.44E-01	pCi/g	100.00%	2.72E+00	8.8E-02	94.19%	11/2/02 09:41 p	5.0	RC5022
							Rec Limits:	70.	130.	-0.1		g	LSC3

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-215 Report No. : 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292215	Work Order: FADXD1AC			Report DB ID: FADXD1CS									
AMERICIUM-241	4.33E+00		3.5E-01	8.7E-01	3.30E-02	pCi/g	57.34%	4.57E+00	1.5E-01	94.85%	11/24/02 11:04 a	2.0	RICHRC5080
							Rec Limits:	70.	130.	-0.1		g	ALP46

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRichLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2J190000-216

Report No. : 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order: FADXV1AC			Report DB ID: FADXV1CS									
NICKEL-63	3.56E+02		7.5E+00	3.3E+01	6.31E+00	pCi/g	86.26%	5.08E+02	1.7E+01	69.99%	11/15/02 07:25 a	0.25	RC5069
							Rec Limits:	70.	130.	-0.3		g	LSC4

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J190000-217 Report No.: 21084 Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292217	Work Order: FADX61AC			Report DB ID: FADX61CS									
IRON-55	2.69E+00	U		1.2E+01	1.87E+01	pCi/g	67.23%	1.50E+01	8.0E-01	18.00%	11/15/02 03:00 p	0.25	FBXZ
							Rec Limits:	70.	130.	-0.8		g	LSC7

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V3.97 A97

Bias = (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM II

LCS RESULTS

Date: 30-Dec-02

Lab Name: STL Richland

SDG: 21324

Lot-Sample No.: J2K270000-323

Report No.: 21084

Matrix: SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2331323	Work Order: FD0VH1AC			Report DB ID: FD0VH1CS									
STRONTIUM-90	9.66E-01		7.4E-02	2.1E-01	4.46E-02	pCi/g	43.99%	3.16E-01	6.2E-03	305.50%	12/25/02 03:42 p	15.0	CMUD
							Rec Limits:	70.	130.	2.0		g	GPC2C

Number of Results: 1

Comments:

STL Richland Bias = (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.97 A97

STL RICHLAND

FORM II

MATRIX SPIKE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21324

Lot-Sample No.: J2J160129-4 Report No.: 21084 Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292211	Work Order:	E94PC1AP		Report DB ID:	E94PC1PW		Orig Sa DB ID:						
TECHNETIUM-99	2.17E+01		4.0E-01	1.5E+00	3.13E-01	pCi/g	100.00%	79.72%	2.72E+01	6.1E-01	11/6/02 02:37 a	5.0	RICHRC5078
		RER										g	LSC6

Number of Results: 1

Comments:

STL Richland
rptSTLRchMs
V3.97 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

FORM II

MATRIX SPIKE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland SDG: 21338

Lot-Sample No.: J2J170140-1 Report No.: 21084 Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2292216	Work Order: E969G1AQ			Report DB ID: E969G1QW			Orig Sa DB ID:						
NICKEL-63	6.73E+02		1.2E+01	6.0E+01	8.98E+00	pCi/g	51.40%	132.24%	5.09E+02	1.7E+01	11/16/02 12:22 a	0.2502 g	RC5069 LSC4
		RER											
Batch: 2292217	Work Order: E969G1AT			Report DB ID: E969G1TW			Orig Sa DB ID:						
IRON-55	2.62E+01			1.6E+01	2.29E+01	pCi/g	54.50%	45.04%	5.82E+01	3.1E+00	11/15/02 03:00 p	0.2502 g	FBXZ LSC7
		RER											

Number of Results: 2

Comments:

STL Richland
rptSTLRchMs
V3.97 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

MATRIX OF REQUIRED ANALYSES AND DETECTION SENSITIVITIES

Column 1	Column 2	Column 3	Column 4	Column 5
			BFSSGAM	BFSSALL
Radionuclide	Analyses	Soil MDC (pCi/g)	Required analysis?	Required analysis ?
Ac-228	(GEA)	N/A	YES	YES
Ag-108m	(GEA)	2.86E-01	YES	YES
Am-241	(GEA)	1.03E+00	YES	YES
Am-241	(AEA)	1.03E+00		YES
Bi-212	(GEA)	N/A	YES	YES
Bi-214	(GEA)	N/A	YES	YES
C-14	(Liquid Scintillation)	2.26E-01		YES
Cm-243/244	(AEA)	1.16E+00		YES
Co-60	(GEA)	1.52E-01	YES	YES
Cs-134	(GEA)	1.87E-01	YES	YES
Cs-137	(GEA)	3.16E-01	YES	YES
Eu-152	(GEA)	4.04E-01	YES	YES
Eu-154	(GEA)	3.72E-01	YES	YES
Eu-155	(GEA)	1.57E+01	YES	YES
Fe-55		1.10E+03		YES
H-3	(Liquid Scintillation)	1.65E+01		YES
K-40	(GEA)	N/A	YES	YES
Mn-54	(GEA)	6.96E-01	YES	YES
Nb-94	(GEA)	2.85E-01	YES	YES
Ni-63	(Liquid Scintillation)	2.89E+01		YES
Pb-212	(GEA)	N/A	YES	YES
Pb-214	(GEA)	N/A	YES	YES
Pu-238	(AEA)	1.18E+00		YES
Pu-239/240	(AEA)	1.07E+00		YES
Pu-241	(Liquid Scintillation)	3.48E+01		YES
Ra-226	(GEA)	N/A	YES	YES
Sr-90	(GPC)	6.20E-02		YES
Tc-99	(Liquid Scintillation)	5.04E-01		YES
Tl-208	(GEA)	N/A	YES	YES

Attachment 2b
Hard-to-Detect Data
(8 Pages)

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: E94PK1AG			Report DB ID: 9E94PK10								
PLUTONIUM-238	-9.56E-04	U	1.9E-03	1.9E-03	2.29E-02	pCi/g	70.40%	-0.04	11/19/02 01:23 p		2.02	RICHRC5010
						4.97E-03	1.18E+00	-1.			g	ALP124
PLUTONIUM-239/40	1.91E-02	J	1.9E-02	1.9E-02	1.29E-02	pCi/g	70.40%	(1.5)	11/19/02 01:23 p		2.02	RICHRC5010
							1.07E+00	(2.)			g	ALP124
Batch: 2292207	Work Order: E94PK1AH			Report DB ID: 9E94PK10								
PLUTONIUM-241	6.94E-01	U	3.2E-01	3.9E-01	7.51E-01	pCi/g	70.40%	0.92	11/25/02 12:54 p		2.02	RICHRC5010
						3.65E-01	3.48E+01	(3.6)			g	LSC4
Batch: 2292209	Work Order: E94PK1AN			Report DB ID: 9E94PK10								
ACTINIUM-228	1.33E+00		3.4E-01	3.4E-01	2.30E-01	pCi/g		(5.8)	11/8/02 01:24 p		231.9	E901.1
								(7.8)			g	GER6$1
AG-108M	-8.03E-03	U	3.4E-02	3.4E-02	5.75E-02	pCi/g		-0.14	11/8/02 01:24 p		231.9	E901.1
								-0.48			g	GER6$1
AMERICIUM-241	1.16E-02	U	1.5E-01	1.5E-01	2.19E-01	pCi/g		0.05	11/8/02 01:24 p		231.9	E901.1
								0.15			g	GER6$1
BISMUTH-214	1.35E+00		2.5E-01	2.5E-01	1.26E-01	pCi/g		(10.6)	11/8/02 01:24 p		231.9	E901.1
								(10.6)			g	GER6$1
COBALT-60	-1.37E-02	U	4.2E-02	4.2E-02	7.40E-02	pCi/g		-0.19	11/8/02 01:24 p		231.9	E901.1
							1.52E-01	-0.66			g	GER6$1
CESIUM-134	3.33E-02	U	5.0E-02	5.0E-02	9.44E-02	pCi/g		0.35	11/8/02 01:24 p		231.9	E901.1
							1.87E-01	(1.3)			g	GER6$1

STL Richland
rptSTLRchSample
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I
SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
CESIUM-137	5.62E-01		1.2E-01	1.2E-01	7.25E-02	pCi/g		(7.8)	11/8/02 01:24 p		231.9	E901.1
							3.16E-01	(9.2)			g	GER6$1
EUROPIUM-152	-3.53E-02	U	1.1E-01	1.1E-01	1.82E-01	pCi/g		-0.19	11/8/02 01:24 p		231.9	E901.1
							4.04E-01	-0.67			g	GER6$1
EUROPIUM-154	-2.13E-01	U	1.4E-01	1.4E-01	2.02E-01	pCi/g		-(1.1)	11/8/02 01:24 p		231.9	E901.1
							3.72E-01	-(3.1)			g	GER6$1
EUROPIUM-155	-1.43E-02	U	1.1E-01	1.1E-01	1.81E-01	pCi/g		-0.08	11/8/02 01:24 p		231.9	E901.1
							1.57E+01	-0.27			g	GER6$1
POTASSIUM-40	1.05E+01		2.0E+00	2.0E+00	7.48E-01	pCi/g		(14.1)	11/8/02 01:24 p		231.9	E901.1
								(10.5)			g	GER6$1
MAGNESIUM-54	4.25E-02	U	5.3E-02	5.3E-02	1.02E-01	pCi/g		0.42	11/8/02 01:24 p		231.9	E901.1
							6.96E-01	(1.6)			g	GER6$1
NIOBIUM-94	8.34E-04	U	3.8E-02	3.8E-02	6.87E-02	pCi/g		0.01	11/8/02 01:24 p		231.9	E901.1
							2.85E-01	0.04			g	GER6$1
LEAD-212	1.29E+00		2.5E-01	2.5E-01	1.07E-01	pCi/g		(12.1)	11/8/02 01:24 p		231.9	E901.1
								(10.4)			g	GER6$1
LEAD-214	1.35E+00		2.8E-01	2.8E-01	1.35E-01	pCi/g		(10.)	11/8/02 01:24 p		231.9	E901.1
								(9.6)			g	GER6$1
RADIUM-226	1.35E+00		2.5E-01	2.5E-01	1.26E-01	pCi/g		(10.6)	11/8/02 01:24 p		231.9	E901.1
								(10.6)			g	GER6$1
THALLIUM-208	4.10E-01		9.1E-02	9.1E-02	5.31E-02	pCi/g		(7.7)	11/8/02 01:24 p		231.9	E901.1
								(9.)			g	GER6$1

STL Richland
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V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: E94PK1AL			Report DB ID: 9E94PK10								
TRITIUM	2.80E-02	U	2.1E-02	2.2E-02	4.85E-02	pCi/g	100.00%	*0.58*	11/2/02 10:30 a		100.5	E906.0
						2.25E-02	1.65E+01	*(2.5)*			g	LSC6
Batch: 2292211	Work Order: E94PK1AD			Report DB ID: 9E94PK10								
TECHNETIUM-99	1.27E-01	U	1.3E-01	2.1E-01	3.09E-01	pCi/g	100.00%	*0.41*	11/6/02 03:39 a		5.0	RICHRC5078
						1.50E-01	5.04E-01	*(1.2)*			g	LSC6
Batch: 2292213	Work Order: E94PK1AC			Report DB ID: 9E94PK10								
CARBON-14	9.07E-03	U	6.1E-02	7.7E-02	1.44E-01	pCi/g	100.00%	*0.06*	11/3/02 05:56 p		5.01	RC5022
						7.06E-02	2.26E-01	*0.24*			g	LSC3
Batch: 2292215	Work Order: E94PK1AM			Report DB ID: 9E94PK10								
AMERICIUM-241	4.79E-03	U	9.6E-03	9.6E-03	1.30E-02	pCi/g	88.70%	*0.37*	11/24/02 07:29 a		2.04	RICHRC5080
							1.03E+00	*1.*			g	ALP127
CURIUM-242	0.00E+00	U	0.0E+00	2.1E-02	2.29E-02	pCi/g	88.70%	*0.*	11/24/02 07:29 a		2.04	RICHRC5080
								0.			g	ALP127
CURIUM-243/244	-1.94E-03	U	2.8E-03	2.8E-03	2.75E-02	pCi/g	88.70%	*-0.07*	11/24/02 07:29 a		2.04	RICHRC5080
						7.15E-03	1.16E+00	*-(1.4)*			g	ALP127
Batch: 2292216	Work Order: E94PK1AJ			Report DB ID: 9E94PK10								
NICKEL-63	2.20E+00	U	3.1E+00	5.9E+00	7.23E+00	pCi/g	74.39%	*0.3*	11/15/02 05:35 p		0.2503	RC5069
						3.52E+00	2.89E+01	*0.75*			g	LSC4
Batch: 2292217	Work Order: E94PK1AK			Report DB ID: 9E94PK10								

STL Richland
rptSTLRchSample
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 8:13:00 AM
Lot-Sample No.:	J2J160129-5	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-004F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
IRON-55	-2.26E+01	U		9.1E+00	1.63E+01	pCi/g	76.73%	-(1.4)	11/15/02 03:00 p		0.2503	FBXZ
						7.62E+00	1.10E+02	-(5.)			g	LSC7
Batch: 2331323	Work Order: E94PK2AF			Report DB ID: 9E94PK20								
STRONTIUM-90	1.76E-02	U	5.1E-02	5.4E-02	1.06E-01	pCi/g	15.21%	0.17	12/25/02 12:12 p		15.01	CMUD
						4.84E-02	6.00E-02	0.66			g	GPC4A

Number of Results: 29

Comments:

STL Richland
rptSTLRchSample
V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

STL RICHLAND

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 7:49:00 AM
Lot-Sample No.:	J2J160129-6	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-019F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292208	Work Order: E94PN1AG			Report DB ID: 9E94PN10								
PLUTONIUM-238	4.57E-03	U	9.1E-03	9.2E-03	1.24E-02	pCi/g	73.45%	0.37	11/19/02 01:23 p		2.01	RICHRC5010
							1.18E+00	1.			g	ALP125
PLUTONIUM-239/40	-9.12E-04	U	1.8E-03	1.8E-03	2.18E-02	pCi/g	73.45%	-0.04	11/19/02 01:23 p		2.01	RICHRC5010
						4.75E-03	1.07E+00	-1.			g	ALP125
Batch: 2292207	Work Order: E94PN1AH			Report DB ID: 9E94PN10								
PLUTONIUM-241	2.80E-01	U	3.0E-01	3.6E-01	7.19E-01	pCi/g	73.40%	0.39	11/25/02 04:16 p		2.01	RICHRC5010
						3.49E-01	3.48E+01	(1.5)			g	LSC4
Batch: 2292209	Work Order: E94PN1AN			Report DB ID: 9E94PN10								
ACTINIUM-228	7.84E-01	U	2.2E-01	2.2E-01	4.10E-01	pCi/g		(1.9)	11/8/02 01:25 p		276.1	E901.1
								(7.2)			g	GER7$1
AG-108M	1.75E-02	U	2.8E-02	2.8E-02	5.12E-02	pCi/g		0.34	11/8/02 01:25 p		276.1	E901.1
								(1.3)			g	GER7$1
AMERICIUM-241	3.14E-02	U	1.1E-01	1.1E-01	1.88E-01	pCi/g		0.17	11/8/02 01:25 p		276.1	E901.1
								0.58			g	GER7$1
BISMUTH-214	4.60E-01	U	1.8E-01	1.8E-01	2.37E-01	pCi/g		(1.9)	11/8/02 01:25 p		276.1	E901.1
								(5.1)			g	GER7$1
COBALT-60	1.50E-01	U	5.5E-02	5.5E-02	1.18E-01	pCi/g		(1.3)	11/8/02 01:25 p		276.1	E901.1
							1.52E-01	(5.5)			g	GER7$1
CESIUM-134	1.02E-02	U	4.1E-02	4.1E-02	7.67E-02	pCi/g		0.13	11/8/02 01:25 p		276.1	E901.1
							1.87E-01	0.5			g	GER7$1

STL Richland
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V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 7:49:00 AM
Lot-Sample No.:	J2J160129-6	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-019F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
CESIUM-137	2.91E-01	J	7.5E-02	7.5E-02	6.78E-02	pCi/g		(4.3)	11/8/02 01:25 p		276.1	E901.1
							3.16E-01	(7.8)			g	GER7$1
EUROPIUM-152	-2.92E-02	U	8.6E-02	8.6E-02	1.44E-01	pCi/g		-0.2	11/8/02 01:25 p		276.1	E901.1
							4.04E-01	-0.68			g	GER7$1
EUROPIUM-154	1.58E-02	U	1.1E-01	1.1E-01	2.08E-01	pCi/g		0.08	11/8/02 01:25 p		276.1	E901.1
							3.72E-01	0.28			g	GER7$1
EUROPIUM-155	1.09E-01	U	9.0E-02	9.0E-02	1.66E-01	pCi/g		0.66	11/8/02 01:25 p		276.1	E901.1
							1.57E+01	(2.4)			g	GER7$1
POTASSIUM-40	1.28E+01		2.0E+00	2.0E+00	4.05E-01	pCi/g		(31.5)	11/8/02 01:25 p		276.1	E901.1
								(12.7)			g	GER7$1
MAGNESIUM-54	-8.74E-03	U	4.0E-02	4.0E-02	7.16E-02	pCi/g		-0.12	11/8/02 01:25 p		276.1	E901.1
							6.96E-01	-0.43			g	GER7$1
NIOBIUM-94	1.30E-02	U	3.1E-02	3.1E-02	5.92E-02	pCi/g		0.22	11/8/02 01:25 p		276.1	E901.1
							2.85E-01	0.84			g	GER7$1
LEAD-212	5.75E-01		1.5E-01	1.5E-01	1.09E-01	pCi/g		(5.3)	11/8/02 01:25 p		276.1	E901.1
								(7.9)			g	GER7$1
LEAD-214	3.27E-01		2.0E-01	2.0E-01	1.11E-01	pCi/g		(2.9)	11/8/02 01:25 p		276.1	E901.1
								(3.2)			g	GER7$1
RADIUM-226	4.60E-01	U	1.8E-01	1.8E-01	2.37E-01	pCi/g		(1.9)	11/8/02 01:25 p		276.1	E901.1
								(5.1)			g	GER7$1
THALLIUM-208	2.75E-01	U	7.8E-02	7.8E-02	1.17E-01	pCi/g		(2.4)	11/8/02 01:25 p		276.1	E901.1
								(7.)			g	GER7$1

STL Richland
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V3.97 A97

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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I
SAMPLE RESULTS

Date: 30-Dec-02

Lab Name: STL Richland
Lot-Sample No.: J2J160129-6
Client Sample ID: 9528-0003-019F

SDG: 21324
Report No.: 21084
COC No.:

Collection Date: 7/13/2002 7:49:00 AM
Received Date: 10/15/2002 2:30:00 PM
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292210	Work Order: E94PN1AL			Report DB ID: 9E94PN10								
TRITIUM	6.05E-02	U	3.4E-02	3.6E-02	7.95E-02	pCi/g	100.00%	*0.76*	11/2/02 11:12 a		100.5	E906.0
						3.69E-02	1.65E+01	*(3.4)*			g	LSC6
Batch: 2292211	Work Order: E94PN1AD			Report DB ID: 9E94PN10								
TECHNETIUM-99	5.33E-02	U	1.3E-01	2.1E-01	3.09E-01	pCi/g	100.00%	*0.17*	11/6/02 04:41 a		5.0	RICHRC5078
						1.50E-01	5.04E-01	*0.52*			g	LSC6
Batch: 2292213	Work Order: E94PN1AC			Report DB ID: 9E94PN10								
CARBON-14	-3.34E-02	U	6.0E-02	7.6E-02	1.44E-01	pCi/g	100.00%	*-0.23*	11/3/02 09:18 p		5.005	RC5022
						7.07E-02	2.26E-01	*-0.88*			g	LSC3
Batch: 2292215	Work Order: E94PN1AM			Report DB ID: 9E94PN10								
AMERICIUM-241	2.00E-02	U	2.1E-02	2.1E-02	2.52E-02	pCi/g	79.23%	*0.79*	11/24/02 07:30 a		1.99	RICHRC5080
						5.48E-03	1.03E+00	*(1.9)*			g	ALP130
CURIUM-242	0.00E+00	U	0.0E+00	2.3E-02	2.52E-02	pCi/g	79.23%	*0.*	11/24/02 07:30 a		1.99	RICHRC5080
								0.			g	ALP130
CURIUM-243/244	0.00E+00	U	0.0E+00	1.3E-02	1.45E-02	pCi/g	79.23%	*0.*	11/24/02 07:30 a		1.99	RICHRC5080
							1.16E+00	*0.*			g	ALP130
Batch: 2292216	Work Order: E94PN1AJ			Report DB ID: 9E94PN10								
NICKEL-63	2.28E+00	U	2.9E+00	5.6E+00	6.96E+00	pCi/g	77.20%	*0.33*	11/15/02 07:17 p		0.2518	RC5069
						3.39E+00	2.89E+01	*0.81*			g	LSC4
Batch: 2292217	Work Order: E94PN1AK			Report DB ID: 9E94PN10								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 30-Dec-02

Lab Name:	STL Richland	SDG:	21324	Collection Date:	7/13/2002 7:49:00 AM
Lot-Sample No.:	J2J160129-6	Report No. :	21084	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-019F	COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
IRON-55	3.78E+01	J		1.7E+01	2.66E+01	pCi/g	60.39%	(1.4)	11/15/02 03:00 p		0.2519	FBXZ
						1.24E+01	1.10E+02	(4.5)			g	LSC7
Batch: 2331323	Work Order: E94PN2AF			Report DB ID: 9E94PN20								
STRONTIUM-90	4.70E-02	J	2.3E-02	2.6E-02	3.88E-02	pCi/g	48.12%	(1.2)	12/25/02 12:12 p		15.01	CMUD
						1.79E-02	6.00E-02	(3.6)			g	GPC4B

Number of Results: 29

Comments:

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V3.97 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Attachment 2c
Sample and Scan Area Data
(4 Pages)

Survey Unit Release Record Scan Area Results
Survey Unit 9528-0003

9528-0003 SCAN AREA 1 SCANNING RESULTS 7/15/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan area 1 Bkg Sec 1	13	-	0	9030	7/15/2002	14:36:00	1105
-	14	-	0	10200	7/15/2002	14:49:00	1105
Scan area 1 Sec 1	15	9030	10386	9810	7/15/2002	15:00:00	1105
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 1 Bkg # 1	6	-	0	11300	7/15/2002	14:42:00	1107
Scan Area 1 Sec 4 ER-1	7	11300	12817	13700	7/15/2002	14:59:00	1107
Scan Area 1 Sec 4	8	11300	12817	10800	7/15/2002	15:01:00	1107
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 1 Bkg #1	11	-	0	13300	7/15/2002	14:34:00	1108
Scan Area 1 Sec 3	12	13300	14946	11500	7/15/2002	14:42:00	1108
Scan Area 1 Bkg #2	13		0	11500	7/15/2002	14:55:00	1108
Scan Area 1 Sec 5	14	11500	13030	11300	7/15/2002	15:03:00	1108
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 1 Bkg #1	7	-	0	8270	7/15/2002	14:31:00	1109
Scan Area 1 Sec 2	8	8270	9568	9290	7/15/2002	14:46:00	1109

9528-0003 SCAN AREA 1 SCANNING RESULTS 7/16/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan Area 1 Bkg #1	1		0	13400	7/16/2002	8:53:00	1105
Scan Area 1 Sec 9 ER #4	2	13400	15052	16100	7/16/2002	9:00:00	1105
Scan Area 1 Sec 9	3	13400	15052	11200	7/16/2002	9:13:00	1105
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 1 Bkg #1	1		0	11200	7/16/2002	7:49:00	1106
Scan Area 1 Sec 10 ER #6	2	11200	12710	12500	7/16/2002	7:56:00	1106
Scan Area 1 Sec 10	3	11200	12710	10400	7/16/2002	8:10:00	1106
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 1 Bkg #1 .	1		0	11500	7/16/2002	8:45:00	1107
Scan Area 1 Sec 7	2	11500	13030	11400	7/16/2002	8:56:00	1107
-	-	-	-	-	-	-	-

Survey Unit Release Record Scan Area Results
Survey Unit 9528-0003

9528-0003 SCAN AREA 1 SCANNING RESULTS 7/16/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan Area 1 Bkg #1	1		0	11300	7/16/2002	8:43:00	1108
Scan Area 1 Sec 6 ER # 2	2	11300	12817	13000	7/16/2002	9:10:00	1108
Scan Area 1 Sec 6 ER # 7	3	11300	12817	14000	7/16/2002	9:11:00	1108
Scan Area 1 Sec 6	4	11300	12817	10900	7/16/2002	9:13:00	1108
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Background taken from field log sheet 1.05E+04							
Scan Area 1 Sec 8 ER #3	2	10500	11962	12900	7/16/2002	8:53:00	1109
Scan Area 1 Sec 8 ER #5	3	10500	11962	13500	7/16/2002	8:58:00	1109
Scan Area 1 Sec 8	4	10500	11962	10200	7/16/2002	9:02:00	1109
-	-	-	-	-	-	-	-

9528-0003 SCAN AREA 2 SCANNING RESULTS 7/15/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan area 2 Bkg # 1	1		0	9730	7/15/2002	10:03:00	1105
Scan area 2 sec 1	2	9730	11138	9800	7/15/2002	10:11:00	1105
Scan area 2 Bkg # 2	3		0	9010	7/15/2002	10:26:00	1105
Scan area 2 sec 2	4	9010	10365	9500	7/15/2002	10:37:00	1105
Scan area 2 Bkg # 3	7		0	9140	7/15/2002	10:53:00	1105
Scan area 2 Sec 10	8	9140	10504	10200	7/15/2002	11:05:00	1105
Scan area 2 Bkg # 4	9		0	8740	7/15/2002	13:34:00	1105
Scan area 2 Sec 14	10	8740	10074	9540	7/15/2002	13:48:00	1105
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 2 Bkg #1	1		0	9770	7/15/2002	8:57:00	1106
Scan Area 2 Sec 4	2	9770	11181	9400	7/15/2002	9:13:00	1106
Scan Area 2 Bkg #2	3		0	9240	7/15/2002	9:20:00	1106
Scan Area 2 Sec 9	4	9240	10612	9600	7/15/2002	9:38:00	1106
Scan Area 2 Bkg #3	5		0	9240	7/15/2002	12:22:00	1106
Scan Area 2 Sec 12	6	9240	10612	9000	7/15/2002	12:37:00	1106
-	-	-	-	-	-	-	-
Survey Location	**Log #**	**Background (cpm)**	**Action Level (cpm)**	**Reading (gross cpm)**	**Log Date**	**Log Time**	**E-600 S/N**
Scan Area 2 Bkg # 1	1		0	9250	7/15/2002	10:04:00	1107
Scan Area 2 Sec 5 ER 1	2	9250	10623	12700	7/15/2002	10:26:00	1107
Scan Area 2 Sec 5 ER 2	3	9250	10623	10700	7/15/2002	10:27:00	1107
Scan Area 2 Sec 5 ER 3	4	9250	10623	10800	7/15/2002	10:29:00	1107
Scan Area 2 Sec 5	5	9250	10623	9960	7/15/2002	10:31:00	1107
-	-	-	-	-	-	-	-

Survey Unit Release Record Scan Area Results
Survey Unit 9528-0003

9528-0003 SCAN AREA 2 SCANNING RESULTS 7/15/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan Area 2 Bkg #1	1		0	10600	7/15/2002	9:58:00	1108
Scan Area 2 Sec 2	2	10600	12069	9720	7/15/2002	10:07:00	1108
Scan Area 2 Bkg # 2	3		0	8830	7/15/2002	10:21:00	1108
Scan Area 2 Sec 7	4	8830	10171	9600	7/15/2002	10:34:00	1108
Scan Area 2 Sec 7 ER 4	5	8830	10171	11000	7/15/2002	10:35:00	1108
Scan Area 2 Sec 7 ER 5	6	8830	10171	11300	7/15/2002	10:36:00	1108
Scan Area 2 Bkg # 3	7		0	9700	7/15/2002	13:27:00	1108
Scan Area 2 Sec 13	8	9700	11106	10400	7/15/2002	13:38:00	1108
Scan Area 2 Bkg # 4	9		0	8180	7/15/2002	13:44:00	1108
Scan Area 2 Sec 15	10	8180	9471	8540	7/15/2002	13:53:00	1108
-	-	-	-	-	-	-	-
Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan Area 2 Bkg #1	1		0	10000	7/15/2002	10:00:00	1109
Scan Area 2 Sec 3	2	10000	11427	10100	7/15/2002	10:10:00	1109
Scan Area 2 Bkg #2	3		0	9760	7/15/2002	10:22:00	1109
Scan Area 2 Sec 8	4	9760	11170	9100	7/15/2002	10:37:00	1109
Scan Area 2 Bkg #3	5		0	9320	7/15/2002	13:24:00	1109
Scan Area 2 Sec 11	6	9320	10698	9790	7/15/2002	13:40:00	1109

9528-0003 SCAN AREA 3 SCANNING RESULTS 7/15/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
Scan area 3 Bkg	11	-	0	9660	7/15/2002	14:05:00	1105
Scan area 3 Reading	12	9660	11063	9800	7/15/2002	14:16:00	1105

Sample Location Scan 9528-0003 7/12/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
9528-0003-019 Bkg	1	-	0	9220	7/12/2002	12:44:00	1106
9528-0003-019	2	9220	10590	8980	7/12/2002	12:46:00	1106
9528-0003-001 Bkg	3	-	0	10300	7/12/2002	12:48:00	1106
9528-0003-001	4	10300	11748	11200	7/12/2002	12:50:00	1106
9528-0003-002 Bkg	5	-	0	9200	7/12/2002	12:52:00	1106
9528-0003-002	6	9200	10569	9910	7/12/2002	12:53:00	1106
9528-0003-003 Bkg	7	-	0	11000	7/12/2002	12:55:00	1106
9528-0003-003	8	11000	12497	11000	7/12/2002	12:58:00	1106
9528-0003-004 Bkg	9	-	0	11700	7/12/2002	12:59:00	1106
9528-0003-004	10	11700	13244	11200	7/12/2002	13:02:00	1106
9528-0003-018 Bkg	11	-	0	10100	7/12/2002	13:03:00	1106
9528-0003-018	12	10100	11534	11700	7/12/2002	13:04:00	1106
9528-0003-005 Bkg	13	-	0	7710	7/12/2002	13:06:00	1106
9528-0003-005	14	7710	8963	9170	7/12/2002	13:07:00	1106
9528-0003-007 Bkg	15	-	0	10000	7/12/2002	13:11:00	1106

Survey Unit Release Record Scan Area Results
Survey Unit 9528-0003

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
9528-0003-007	16	10000	11427	10700	7/12/2002	13:14:00	1106
9528-0003-017 Bkg	17	-	0	11900	7/12/2002	13:15:00	1106
	18	-	0	13200	7/12/2002	13:16:00	1106
9528-0003-017	19	11900	13457	14100	7/12/2002	13:16:00	1106
9528-0003-009 Bkg	20	-	0	11700	7/12/2002	13:21:00	1106
9528-0003-009	21	11700	13244	11900	7/12/2002	13:23:00	1106
9528-0003-010 Bkg	22	-	0	11400	7/12/2002	13:24:00	1106
9528-0003-010	23	11400	12924	10200	7/12/2002	13:25:00	1106
9528-0003-011 Bkg	24	-	0	11400	7/12/2002	13:26:00	1106
9528-0003-011	25	11400	12924	12400	7/12/2002	13:27:00	1106
9528-0003-012 Bkg	26	-	0	10900	7/12/2002	13:29:00	1106
9528-0003-012	27	10900	12390	9970	7/12/2002	13:38:00	1106
9528-0003-013 Bkg	28	-	0	10200	7/12/2002	13:40:00	1106
9528-0003-013	29	10200	11641	9610	7/12/2002	13:42:00	1106

Sample Location Scan 9528-0003 7/13/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
9528-0003-017 Bkg	1	-	0	10200	7/13/2002	10:41:00	1106
9528-0003-017	2	10200	11641	10300	7/13/2002	10:45:00	1106
9528-0003-015 Bkg	3	-	0	8490	7/13/2002	10:46:00	1106
9528-0003-015	4	8490	9805	9140	7/13/2002	10:51:00	1106
9528-0003-016 Bkg	5	-	0	9640	7/13/2002	10:54:00	1106
9528-0003-016	6	9640	11041	8760	7/13/2002	10:57:00	1106
9528-0003-014 Bkg	7	-	0	7710	7/13/2002	10:59:00	1106
9528-0003-014	8	7710	8963	8220	7/13/2002	11:03:00	1106

Sample Location Scan 9528-0003 7/15/2002

Survey Location	Log #	Background (cpm)	Action Level (cpm)	Reading (gross cpm)	Log Date	Log Time	E-600 S/N
9528-0003-006FM Bkg	5	-	0	10300	7/15/2002	10:48:00	1105
9528-0003-006FM	6	10300	11748	10000	7/15/2002	10:51:00	1105

Attachment 2d
Split Sample Assessment Forms
(5 Pages)

Split Sample Assessment Form

Survey Area#: 9528	Survey Unit #: 0003	Survey Unit name: Southeast Mountain Side

Sample Plan or WPIR#: 24265-000-GEN-0002-00104-000	SML#: 9528-0003-010F/10FS

Sample Description: Comparison of split samples collected to 15 cm depth from sample measurement location #10F and analyzed using gamma spectroscopy by off-site vendor laboratory.

STANDARD					COMPARISON			
Radionuclide	Activity Value pCi/g	Standard Error	Resolution	Agreement Range	Activity Value pCi/g	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	0.0915	0.0225	4.06	0.5-2.0	0.0982	0.0205	1.07	Y

Comments/Corrective Actions: N/A

Table is provided to show acceptance criteria used to assess split samples.

Resolution	Agreement Range
4 - 7	0.5 - 2.0
8 - 15	0.6 - 1.66
16 - 50	0.75 - 1.33
51 - 200	0.80 - 1.25
>200	0.85 - 1.18

Performed By:	Date 1.10.05	Reviewed By:	Date:

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:10:00 AM
Lot-Sample No.:	J2J160133-22	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-010F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q21AA			Report DB ID: 9E94Q210								
ACTINIUM-228	1.07E+00		2.4E-01	2.4E-01	1.83E-01	pCi/g		(5.9)	11/11/02 08:18 a		348.2	E901.1
								(8.8)			g	GER2$1
AG-108M	-3.20E-03	U	2.7E-02	2.7E-02	4.56E-02	pCi/g		-0.07	11/11/02 08:18 a		348.2	E901.1
								-0.24			g	GER2$1
AMERICIUM-241	-3.09E-01	U	3.8E-01	3.8E-01	6.08E-01	pCi/g		-0.51	11/11/02 08:18 a		348.2	E901.1
								-(1.6)			g	GER2$1
BISMUTH-214	7.84E-01	U	1.8E-01	1.8E-01	2.42E-01	pCi/g		(3.2)	11/11/02 08:18 a		348.2	E901.1
								(8.8)			g	GER2$1
COBALT-60	2.83E-02	U	3.1E-02	3.1E-02	6.27E-02	pCi/g		0.45	11/11/02 08:18 a		348.2	E901.1
							1.52E-01	(1.8)			g	GER2$1
CESIUM-134	3.72E-02	U	4.1E-02	4.1E-02	7.73E-02	pCi/g		0.48	11/11/02 08:18 a		348.2	E901.1
							1.87E-01	(1.8)			g	GER2$1
CESIUM-137	9.15E-02	U	4.5E-02	4.5E-02	8.50E-02	pCi/g		(1.1)	11/11/02 08:18 a		348.2	E901.1
							3.16E-01	(4.)			g	GER2$1
EUROPIUM-152	-6.04E-02	U	1.4E-01	1.4E-01	1.70E-01	pCi/g		-0.36	11/11/02 08:18 a		348.2	E901.1
							4.04E-01	-0.89			g	GER2$1
EUROPIUM-154	3.36E-02	U	1.1E-01	1.1E-01	2.11E-01	pCi/g		0.16	11/11/02 08:18 a		348.2	E901.1
							3.72E-01	0.59			g	GER2$1
EUROPIUM-155	5.44E-02	U	1.5E-01	1.5E-01	2.54E-01	pCi/g		0.21	11/11/02 08:18 a		348.2	E901.1
							1.57E+01	0.74			g	GER2$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I
SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:10:00 AM
Lot-Sample No.:	J2J160133-22	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-010F	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.16E+01		1.8E+00	1.8E+00	5.02E-01	pCi/g		*(23.2)*	11/11/02 08:18 a		348.2	E901.1
								(13.)			g	GER2$1
MAGNESIUM-54	-3.96E-02	U	4.6E-02	4.6E-02	7.63E-02	pCi/g		*-0.52*	11/11/02 08:18 a		348.2	E901.1
							6.96E-01	*-(1.7)*			g	GER2$1
NIOBIUM-94	-1.04E-02	U	3.2E-02	3.2E-02	5.52E-02	pCi/g		*-0.19*	11/11/02 08:18 a		348.2	E901.1
							2.85E-01	*-0.65*			g	GER2$1
LEAD-212	1.11E+00		2.2E-01	2.2E-01	9.40E-02	pCi/g		*(11.8)*	11/11/02 08:18 a		348.2	E901.1
								(10.)			g	GER2$1
LEAD-214	8.51E-01		1.9E-01	1.9E-01	1.15E-01	pCi/g		*(7.4)*	11/11/02 08:18 a		348.2	E901.1
								(8.7)			g	GER2$1
RADIUM-226	7.84E-01	U	1.8E-01	1.8E-01	2.42E-01	pCi/g		*(3.2)*	11/11/02 08:18 a		348.2	E901.1
								(8.8)			g	GER2$1
THALLIUM-208	3.50E-01	U	7.8E-02	7.8E-02	1.19E-01	pCi/g		*(2.9)*	11/11/02 08:18 a		348.2	E901.1
								(9.)			g	GER2$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:10:00 AM
Lot-Sample No.:	J2J160133-23	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-010FS	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 2292220	Work Order: E94Q41AA			Report DB ID: 9E94Q410								
ACTINIUM-228	1.09E+00		2.6E-01	2.6E-01	1.60E-01	pCi/g		(6.8)	11/11/02 08:19 a		375.3	E901.1
								(8.4)			g	GER4$1
AG-108M	-1.96E-02	U	2.3E-02	2.3E-02	3.69E-02	pCi/g		-0.53	11/11/02 08:19 a		375.3	E901.1
								-(1.7)			g	GER4$1
AMERICIUM-241	6.14E-02	U	1.7E-01	1.7E-01	2.94E-01	pCi/g		0.21	11/11/02 08:19 a		375.3	E901.1
								0.73			g	GER4$1
BISMUTH-214	8.27E-01		1.5E-01	1.5E-01	7.28E-02	pCi/g		(11.4)	11/11/02 08:19 a		375.3	E901.1
								(10.7)			g	GER4$1
COBALT-60	1.48E-02	U	2.9E-02	2.9E-02	5.68E-02	pCi/g		0.26	11/11/02 08:19 a		375.3	E901.1
							1.52E-01	(1.)			g	GER4$1
CESIUM-134	2.90E-02	U	3.5E-02	3.5E-02	6.69E-02	pCi/g		0.43	11/11/02 08:19 a		375.3	E901.1
							1.87E-01	(1.7)			g	GER4$1
CESIUM-137	9.82E-02	U	4.1E-02	4.1E-02	7.88E-02	pCi/g		(1.2)	11/11/02 08:19 a		375.3	E901.1
							3.16E-01	(4.8)			g	GER4$1
EUROPIUM-152	5.57E-02	U	7.4E-02	7.4E-02	1.36E-01	pCi/g		0.41	11/11/02 08:19 a		375.3	E901.1
							4.04E-01	(1.5)			g	GER4$1
EUROPIUM-154	8.10E-02	U	9.7E-02	9.7E-02	1.90E-01	pCi/g		0.43	11/11/02 08:19 a		375.3	E901.1
							3.72E-01	(1.7)			g	GER4$1
EUROPIUM-155	1.30E-01	U	9.2E-02	9.2E-02	1.66E-01	pCi/g		0.78	11/11/02 08:19 a		375.3	E901.1
							1.57E+01	(2.8)			g	GER4$1

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 19-Nov-02

Lab Name:	STL Richland	SDG:	21325	Collection Date:	7/13/2002 9:10:00 AM
Lot-Sample No.:	J2J160133-23	Report No.:	20980	Received Date:	10/15/2002 2:30:00 PM
Client Sample ID:	9528-0003-010FS	COC No.:		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
POTASSIUM-40	1.16E+01		1.8E+00	1.8E+00	3.82E-01	pCi/g		*(30.8)*	11/11/02 08:19 a		375.3	E901.1
								(13.2)			g	GER4$1
MAGNESIUM-54	-7.72E-04	U	3.5E-02	3.5E-02	6.17E-02	pCi/g		*-0.01*	11/11/02 08:19 a		375.3	E901.1
							6.96E-01	*-0.04*			g	GER4$1
NIOBIUM-94	6.87E-03	U	2.5E-02	2.5E-02	4.56E-02	pCi/g		*0.15*	11/11/02 08:19 a		375.3	E901.1
							2.85E-01	*0.56*			g	GER4$1
LEAD-212	9.56E-01		1.8E-01	1.8E-01	8.28E-02	pCi/g		*(11.5)*	11/11/02 08:19 a		375.3	E901.1
								(10.7)			g	GER4$1
LEAD-214	9.08E-01		1.7E-01	1.7E-01	9.39E-02	pCi/g		*(9.7)*	11/11/02 08:19 a		375.3	E901.1
								(10.4)			g	GER4$1
RADIUM-226	8.28E-01		1.5E-01	1.5E-01	7.28E-02	pCi/g		*(11.4)*	11/11/02 08:19 a		375.3	E901.1
								(10.7)			g	GER4$1
THALLIUM-208	2.73E-01		7.8E-02	7.8E-02	5.05E-02	pCi/g		*(5.4)*	11/11/02 08:19 a		375.3	E901.1
								(7.)			g	GER4$1

Number of Results: 17

Comments:

STL Richland
rptSTLRchSample
V3.96 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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Attachment 2e
Preliminary Data Review Form
(1 Page)

PRELIMINARY DATA REVIEW FORM - SAMPLES FOR SIGN TEST

Survey Unit:	9528-0003
Survey Unit Name:	Southeast Mountain Side
Classification:	2
Survey Media:	Soil
Type of Survey:	Final Status Survey
Type of Measurement:	Radionuclide Specific
Number of Measurements:	15
Operational DCGL:	1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60
RANGE **Minimum Value:**	-1.36E-02	-5.61E-02
Maximum Value:	5.62E-01	6.82E-02
Mean:	1.10E-01	3.01E-03
Median:	7.17E-02	1.63E-03
Standard Deviation:	1.58E-01	3.01E-02
Radioactive concentration variance of the weighted sum(1):	5.38E-02	

	RADIONUCLIDE CONCENTRATION (pCi/g)			
NUMBER	**Cs-137**	**Identified?**	**Co-60**	**Identified?**
9528-0003-001F	8.88E-03	N	-1.33E-03	N
9528-0003-002F	2.27E-02	N	5.13E-03	N
9528-0003-003F	8.15E-02	Y	4.26E-02	Y
9528-0003-004F	5.62E-01	Y	-1.37E-02	N
9528-0003-005F	4.02E-02	Y	9.29E-03	N
9528-0003-006F	7.17E-02	Y	1.39E-02	N
9528-0003-007F	1.52E-02	N	1.45E-02	N
9528-0003-008F	3.66E-01	Y	-5.61E-02	N
9528-0003-009F	1.60E-01	Y	-2.79E-02	N
9528-0003-010F	9.15E-02	Y	2.83E-02	N
9528-0003-011F	-1.36E-02	N	-9.23E-03	N
9528-0003-012F	1.43E-03	N	1.63E-03	N
9528-0003-013F	-1.12E-02	N	-2.91E-02	N
9528-0003-014F	1.34E-01	Y	6.82E-02	Y
9528-0003-015F	1.27E-01	Y	-1.07E-03	N

(1) MARSSIM Section I.11.3 describes the use of the radioactive concentration variance of the weighted sum when measured concentrations of the various radionuclides are assumed to be uncorrelated (i.e., there is not a fixed ratio between the concentrations)

1.10.05

Submitted by/Date

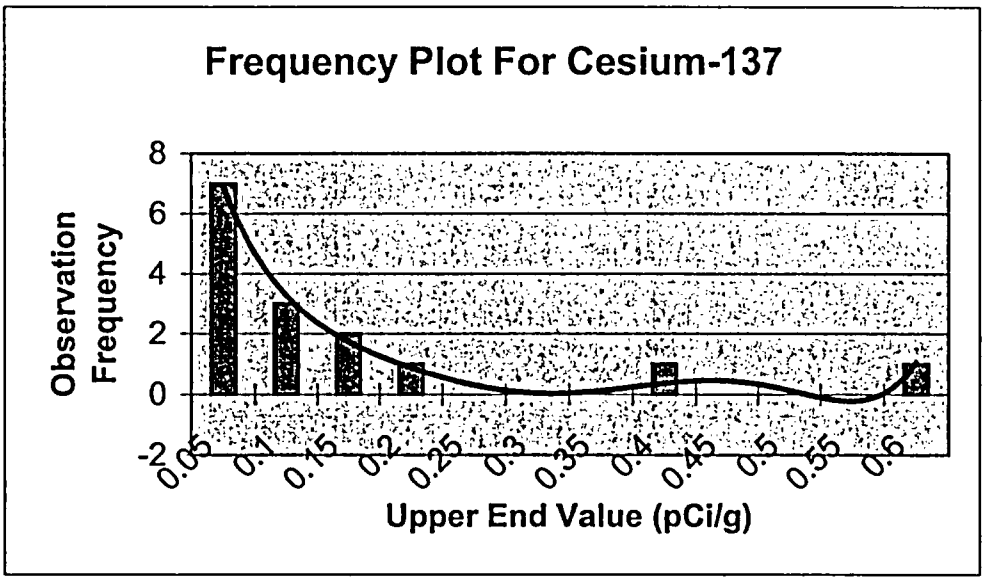
2/17/05

Reviewed by/Date

Attachment 2f
Graphical Representation of Data
(4 Pages)

Frequency Plot for
Cesium-137

Survey Unit: 9528-0003
Survey Unit Name: Southeast Mountain Side



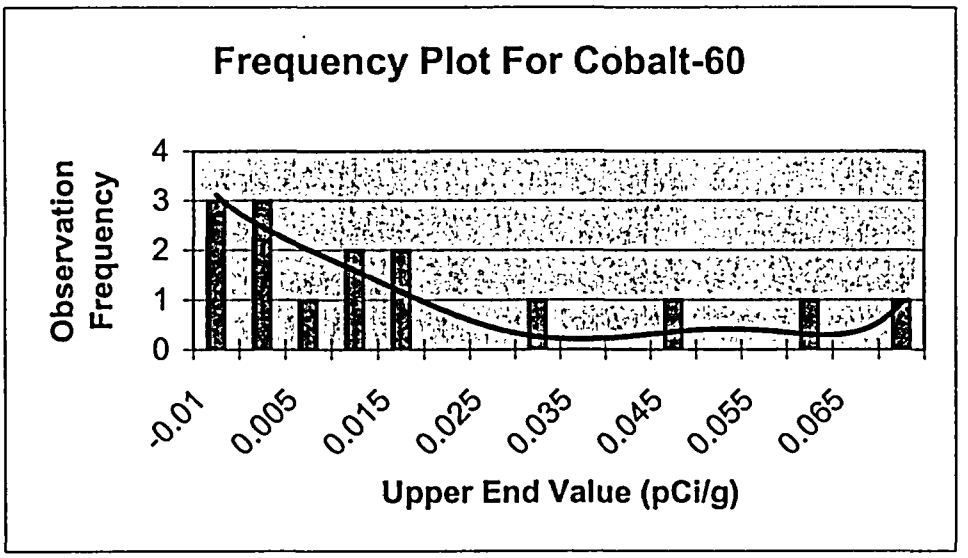
Upper End Value	Observation Frequency	Observation Frequency
0.05	7	47%
0.1	3	20%
0.15	2	13%
0.2	1	7%
0.25	0	0%
0.3	0	0%
0.35	0	0%
0.4	1	7%
0.45	0	0%
0.5	0	0%
0.55	0	0%
0.6	1	7%
Total =	15	100%

1.11.05
Submitted by/Date

2/17/05
Reviewed by/Date

Frequency Plot for Cobalt-60

Survey Unit: 9528-0003
Survey Unit Name: Southeast Mountain Side



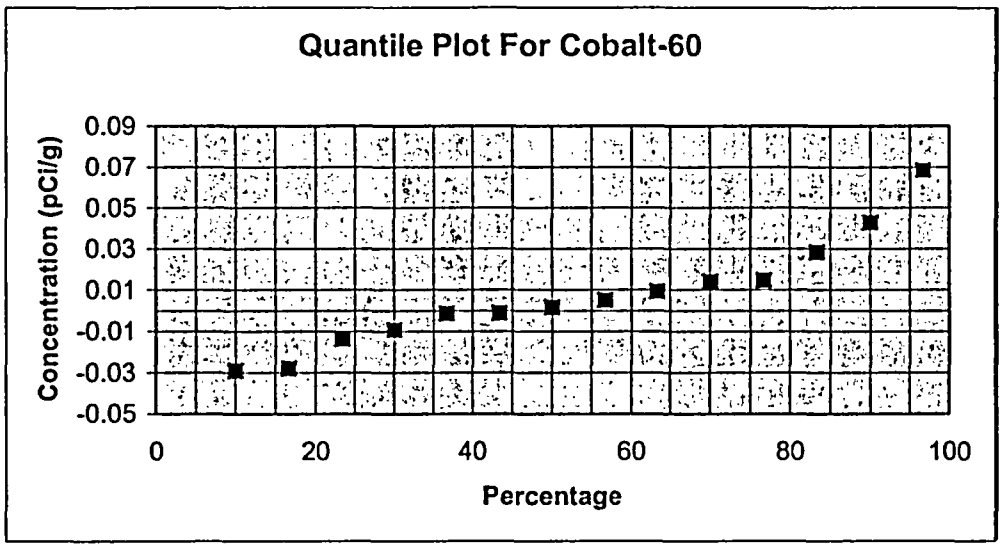
Upper End Value	Observation Frequency	Observation Frequency
-0.01	3	20%
0	3	20%
0.005	1	7%
0.01	2	13%
0.015	2	13%
0.02	0	0%
0.025	0	0%
0.03	1	7%
0.035	0	0%
0.04	0	0%
0.045	1	7%
0.05	0	0%
0.055	0	0%
0.06	1	7%
0.065	0	0%
0.07	1	7%
Total=	15	100%

1.11.05
Submitted by/Date

2/17/05
Reviewed by/Date

DATA QUANTILE PLOT

Survey Unit: 9528-0003
Survey Unit Name: Southeast Mountain Side Survey Area



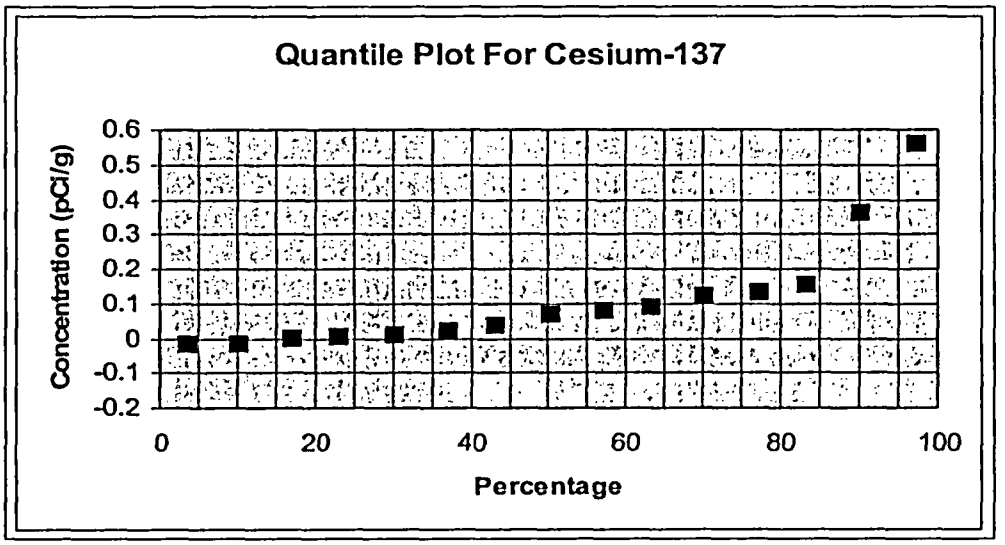
Co-60	Rank	Percentage
-5.61E-02	1	3%
-2.91E-02	2	10%
-2.79E-02	3	17%
-1.37E-02	4	23%
-9.23E-03	5	30%
-1.33E-03	6	37%
-1.07E-03	7	43%
1.63E-03	8	50%
5.13E-03	9	57%
9.29E-03	10	63%
1.39E-02	11	70%
1.45E-02	12	77%
2.83E-02	13	83%
4.26E-02	14	90%
6.82E-02	15	97%

1.10.05
Submitted By/Date

2/17/05
Reviewed By/Date

DATA QUANTILE PLOT

Survey Unit: 9528-0003
Survey Unit Name: Southeast Mountain Side Survey Area



Cs-137	Rank	Percentage
-1.36E-02	1	3%
-1.12E-02	2	10%
1.43E-03	3	17%
8.88E-03	4	23%
1.52E-02	5	30%
2.27E-02	6	37%
4.02E-02	7	43%
7.17E-02	8	50%
8.15E-02	9	57%
9.15E-02	10	63%
1.27E-01	11	70%
1.34E-01	12	77%
1.60E-01	13	83%
3.66E-01	14	90%
5.62E-01	15	97%

1.10.05
Submitted By/Date

2/12/05
Reviewed By/Date

Attachment 2g
Sign Test Calculation
(1 Page)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Unit Number: 9528-0003		
Survey Unit Name: Southeast Mountain Side		
WP&IR#: 24265-000-GEN-0002-00104-000		
Classification: 2	TYPE I (α error): 0.05	TYPE II (β error): 0.05

Radionuclides:		Cesium-137		Cobalt-60
Survey Design DCGL (pCi/g):		3.16		1.52
Results 1st Radionuclide (pCi/g)	Results 2nd Radionuclide (pCi/g)	Weighted sum (W_s)	1 - W_s	Sign
8.88E-03	-1.33E-03	1.94E-03	9.98E-01	1
2.27E-02	5.13E-03	1.06E-02	9.89E-01	1
8.15E-02	4.26E-02	5.38E-02	9.46E-01	1
5.62E-01	-1.37E-02	1.69E-01	8.31E-01	1
4.02E-02	9.29E-03	1.88E-02	9.81E-01	1
7.17E-02	1.39E-02	3.18E-02	9.68E-01	1
1.52E-02	1.45E-02	1.43E-02	9.86E-01	1
3.66E-01	-5.61E-02	7.89E-02	9.21E-01	1
1.60E-01	-2.79E-02	3.23E-02	9.68E-01	1
9.15E-02	2.83E-02	4.76E-02	9.52E-01	1
-1.36E-02	-9.23E-03	-1.04E-02	1.01E+00	1
1.43E-03	1.63E-03	1.52E-03	9.98E-01	1
-1.12E-02	-2.91E-02	-2.27E-02	1.02E+00	1
1.34E-01	6.82E-02	8.73E-02	9.13E-01	1
1.27E-01	-1.07E-03	3.95E-02	9.61E-01	1
		Number Of Positive Differences (S+):		15

Critical Value: 11 Survey Unit: Meets Acceptance Criterion

Performed By: [signature] Date: 1.10.05

Independent Review By: [signature] Date: 2/17/05

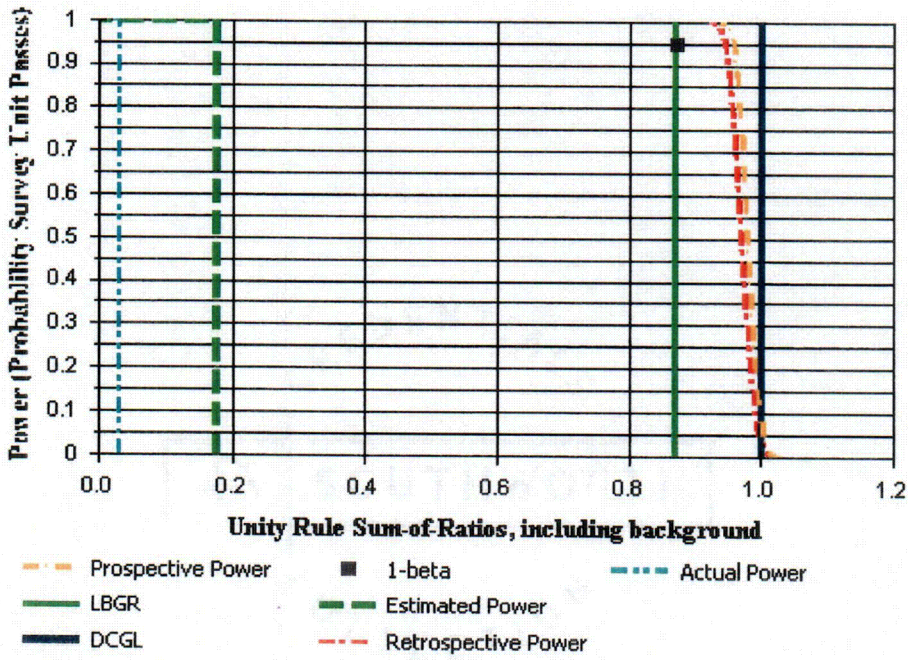
Attachment 2h
COMPASS DQA Surface Soil Report with Retrospective Power Curve
(3 Pages)

DQA Surface Soil Report

Assessment Summary

Site:	Survey Unit 9528-0003		
Planner(s):	CE Davis		
Survey Unit Name:	Southeast Mountain Side		
Report Number:	1		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



C06

DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" Indicates survey unit sample.
Type = "R" Indicates reference area sample.

Sample Number	Type	Co-60 (pCi/g)	Cs-137 (pCi/g)
9528-0003-001F	S	0	0.01
9528-0003-002F	S	0.01	0.02
9528-0003-003F	S	0.04	0.08
9528-0003-004F	S	-0.01	0.56
9528-0003-005F	S	0.01	0.04
9528-0003-006F	S	0.01	0.07
9528-0003-007F	S	0.01	0.02
9528-0003-008F	S	-0.06	0.37
9528-0003-009F	S	-0.03	0.16
9528-0003-010F	S	0.03	0.09
9528-0003-011F	S	-0.01	-0.01
9528-0003-012F	S	0	0
9528-0003-013F	S	-0.03	-0.01
9528-0003-014F	S	0.07	0.13
9528-0003-015F	S	0	0.13

Modified Data (Unity Rule SOR)

NOTE: Type = "S" Indicates survey unit sample.
Type = "R" Indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
9528-0003-001F	S	0
9528-0003-002F	S	0.01
9528-0003-003F	S	0.05
9528-0003-004F	S	0.17
9528-0003-005F	S	0.02
9528-0003-006F	S	0.03
9528-0003-007F	S	0.01
9528-0003-008F	S	0.08
9528-0003-009F	S	0.03
9528-0003-010F	S	0.05
9528-0003-011F	S	-0.01
9528-0003-012F	S	0
9528-0003-013F	S	-0.02
9528-0003-014F	S	0.09
9528-0003-015F	S	0.04

DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=13
Mean (SOR)	0.04	N/A	0.17
Median (SOR)	0.03	N/A	N/A
Std Dev (SOR)	0.05	N/A	0.04
High Value (SOR)	0.17	N/A	N/A
Low Value (SOR)	-0.02	N/A	N/A