



# **Final Status Survey Final Report Phase IV**

**Appendix A15  
Survey Unit Release Record  
9106-0015, Discharge Canal**

**November 2006**



CYAPCO  
FINAL STATUS SURVEY RELEASE RECORD  
DISCHARGE CANAL  
SURVEY UNIT 9106-0015

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**1. SURVEY UNIT DESCRIPTION**

Survey Unit 9106-0015 (Discharge Canal) is designated as Final Status Survey (FSS) Class 1 and consists of approximately 1,170 m<sup>2</sup> (0.29 acres) of water covered sediment in an area located approximately 0.81 miles from the reference coordinate system benchmark used at the Haddam Neck Plant (HNP) (see Attachment 1, Figure 1). The Discharge Canal is a man-made mile long waterway that runs parallel to, and ultimately communicates with the Connecticut River. The Discharge Canal is subdivided into fifteen (15) survey units including two (2) permanent wetland areas for FSS purposes. The survey unit is completely surrounded by Discharge Canal Survey Unit 9106-0007. The survey unit comprises the canal sediments to the depth of three feet from the top of the sediment layer or the original construction depth. This survey unit is bounded by reference coordinates E022 through E029 and by S133 through S143 (refer to License Termination Plan Section 5.4.4). 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) based on the Connecticut State Plane System North American Datum (NAD) 1927.

**2. CLASSIFICATION BASIS**

The survey unit was classified in accordance with Procedure RPM 5.1-10, "Survey Unit Classification." The historical information, scoping analyses and characterization results provided sufficient data to designate Survey Unit 9106-0015 as Class 1 in June 2006.

The "Classification Basis Summary" conducted for this survey unit consisted of:

- a) A review of the 10CFR50.75 (g) (1) database,
- b) A review of the "Initial Characterization Report" and the "Historic Site Assessment (HSA) Supplement,"
- c) Historic and current survey records review,
- d) Visual inspections and a "walk-down."
- e) Formal or informal interviews with cognizant personnel.

A review of the 10CFR50.75(g)(1) database report identified a number of events that may have impacted this survey unit. Several events indicated the potential for plant related contamination in the survey unit. These included a number of primary side system to secondary side system leakage events, contamination found to be present in secondary side systems and components, and unmonitored spills that drained to the discharge canal. In 1986, samples were taken from the legacy dredge spoils removed in 1979 dredged spoils area and from recently dredged canal sediment. The sample analyses indicated that the concentrations of Cs-137, Co-60 and other radionuclides were a small



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fraction of the DCGLs for those nuclides that could be identified by gamma spectroscopy. (refer to NE-86-RA-1142 dated 11-13-86). None of the available historical information reviewed would support a conclusion that any residual activity in this survey unit is likely to be present at concentrations greater than the respective DCGLs.

Additional information was provided by several historical documents, including the "Results of Scoping Survey", (completed 9/1/98), the "Historical Site Assessment", and the HSA Supplement (dated 6-30-00). These documents presented the results of several sediment samples taken in 1997. These sample results indicated concentrations of 0.5 pCi/g for Co-60, 0.024 pCi/g for Cs-134 and 0.722 pCi/g for Cs-137.

The survey area that constitutes Survey Unit 9106-0015 was initially a portion of Class 2 Survey Unit 9106-0007. However, upon reviewing the FSS data for Survey Unit 9106-0007, it was determined that one (1) sample exceeded the Operational DCGL for the area. This required that a portion of Survey Unit 9106-0007 be reclassified as a Class 1 survey unit. This was done and the newly created survey unit was designated 9106-0015.

The FSS data taken in association with the initial FSS design for Survey Unit 9106-0007, was deemed to be appropriate for characterization data for Survey Unit 9106-0015. This consisted of fifteen (15) sediment samples taken from fifteen (15) locations. All of the samples were analyzed by gamma spectroscopy and for Sr-90. In addition, two (2) of these samples were analyzed for all Hard-to-Detect (HTD) nuclides. The results indicated that the radionuclides of concern identified for FSS planning purposes were Cs-137, Co-60 and Sr-90 (refer to Table 1).

<b>Parameter</b>	<b>Cs-137 (pCi/g)</b>	<b>Co-60 (pCi/g)</b>	<b>Sr-90 (pCi/g)</b>
Minimum Value:	-1.62E-02	-1.46E-02	-9.81E-03
Maximum Value:	6.42E-01	3.09E+00	4.04E-02
Mean:	2.25E-01	4.90E-01	8.03E-03
Median:	2.21E-01	1.20E-01	7.30E-03
Standard Deviation:	2.22E-01	8.32E-01	1.08E-02
NOTE: The Operational DCGLs from Table 2 are 6.01 pCi/g for Cs-137, 2.90 pCi/g for Co-60 and 1.18 for Sr-90; these are used in conjunction with the unity rule to achieve nineteen (19) mrem/yr TEDE			

The FSS Engineer performed a visual inspection and walk-down during May 2006 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions.

Based upon the historical information and the results of radiological surveys performed during characterization, it was concluded that there was significant probability for residual radioactivity to be present in this survey unit in

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concentrations greater than the Operational DCGLs justifying a final survey unit classification of Class 1 (refer to Section 3).

**3. DATA QUALITY OBJECTIVES (DQO)**

FSS design and planning is based on 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 incorporates 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 primary objective of the Final Status Survey Plan (FSSP) was to demonstrate that the level of residual radioactivity in Survey Unit 9106-0015 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of Derived Concentration Guideline Levels (DCGLs). The DCGLs represent the concentration of radioactivity above background, equivalent to a dose-based release criterion and is presented in terms of surface or mass activity concentrations. Chapter 6 of the LTP describes in detail the modeling used to develop the DCGLs for soil (called Base Case Soil DCGL), for existing groundwater radioactivity and for future groundwater radioactivity that will be contributed by building foundations and footings.

As described in detail in the LTP, the dose model applied to the discharge canal presumes that the canal sediments are dredged to a depth of three (3) feet below the top of the sediment layer and spread for the planting of crops per the Resident Farmer Scenario. Consequently, the soil DCGLs are directly applied to the canal sediment media

The DCGLs presented in Chapter 6 of the LTP were developed for exposures from three (3) components, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity. Equation 1 shows the mathematical relationship between the three (3) components and the total dose.

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*Equation 1:*

$$H_{\text{Total}} = H_{\text{Soil (sediment)}} + H_{\text{Existing GW}} + H_{\text{Future GW}}$$

The total dose under the LTP criteria is twenty-five (25) mrem/yr TEDE from all three components. The allowable total dose under the Connecticut Department of Environmental Protection (CTDEP) radiological remediation standard for Connecticut Yankee (CY) is nineteen (19) mrem/yr TEDE. To satisfy both the LTP and CY CTDEP criteria, the dose from soil must be reduced when using the groundwater dose values discussed above.

This survey unit is not affected by existing groundwater, (reference CY memo ISC 06-024). Therefore, dose contribution from existing groundwater is zero (0) mrem/yr TEDE.

This survey unit is not impacted by future groundwater radioactive contamination, as there are no concrete foundations or footings remaining within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater is zero (0) mrem/yr TEDE.

*Equation 2:*

$$19 \text{ mrem/yr}_{\text{Total}} = 19 \text{ mrem/yr}_{\text{Soil}} + 0 \text{ mrem/yr}_{\text{Existing GW}} + 0 \text{ mrem/yr}_{\text{Future GW}}$$

The allowable dose for soil in this survey unit is nineteen (19) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in nineteen (19) mrem/yr TEDE is designated as the Operational DCGL, and has been established for the radionuclides of concern as provided in Table 2.

Note: The survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 to conservatively account for the contribution to the total dose from existing and future groundwater which had not been established at the time of planning the FSS.

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<b>Table 2 – Radionuclide Specific Base Case Soil DCGL, Operational DCGLs and Required Minimum Detectable Concentrations</b>			
<b>Radionuclide</b> <sup>(1)</sup>	<b>Base Case Soil DCGL (pCi/g)</b> <sup>(2)</sup>	<b>Operational DCGL (pCi/g)</b> <sup>(3)</sup>	<b>Required MDC (pCi/g)</b> <sup>(4)</sup>
H-3	4.12E+02	3.13E+02	1.65E+01
C-14	5.66E+00	4.30E+00	2.26E-01
Mn-54	1.74E+01	1.32E+01	6.96E-01
<b>Fe-55</b>	2.74E+04	2.08E+04	1.10E+03
Co-60	3.81E+00	2.90E+00	1.52E-01
<b>Ni-63</b>	7.23E+02	5.49E+02	2.89E+01
<b>Sr-90</b>	1.55E+00	1.18E+00	6.20E-02
Nb-94	7.12E+00	5.41E+00	2.85E-01
<b>Tc-99</b>	1.26E+01	9.58E+00	5.04E-01
Ag-108m	7.14E+00	5.43E+00	2.86E-01
Cs-134	4.67E+00	3.55E+00	1.87E-01
Cs-137	7.91E+00	6.01E+00	3.16E-01
Eu-152	1.01E+01	7.68E+00	4.04E-01
Eu-154	9.29E+00	7.06E+00	3.72E-01
Eu-155	3.92E+02	2.98E+02	1.57E+01
<b>Pu-238</b>	2.96E+01	2.25E+01	1.18E+00
<b>Pu-239/240</b>	2.67E+01	2.03E+01	1.07E+00
<b>Pu-241</b>	8.70E+02	6.61E+02	3.48E+01
Am-241 <sup>(5)</sup>	2.58E+01	1.96E+01	1.03E+00
<b>Cm-243/244</b>	2.90E+01	2.20E+01	1.16E+00

(1) **Bold** indicates those radionuclides considered to be Hard to Detect (HTD)

(2) The Base Case Soil DCGLs for soil are specified by the LTP in Chapter 6 and are equivalent to twenty-five (25) mrem/yr TEDE

(3) The Operational DCGL is equivalent to nineteen (19) mrem/yr TEDE

(4) The required MDC is equivalent to one (1) mrem/yr TEDE

(5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed.

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Initial characterization was performed in April of 2004 as discussed in Section 2. Cs-137, Co-60 and Sr-90 were found to be the predominate radionuclides of concern. The basic statistical quantities (i.e., mean, standard deviation, median) for Cs-137, Co-60 and Sr-90 are provided in Table 1.

As part of the DQOs applied to laboratory processes, analysis results were reported as actual calculated results. Results reported as less than Minimum Detectable Concentration (<MDC) were not accepted for FSS. Sample report

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summaries included unique sample identification, analytical method, radionuclide, result, and uncertainty to two (2) standard deviations, laboratory data qualifiers, units, and the required and observed MDC.

The Elevated Measurement Comparison (EMC) consists of comparing each measurement from the survey unit with the investigation levels discussed in Section 4 (and presented in Table 4). As stated in Section 5.8.3 of the LTP, any measurement from the survey unit that is greater than an investigation level indicates an area of relatively high concentrations that should be investigated, regardless of the outcome of the nonparametric statistical tests. Thus the use of the EMC against the investigation levels may be viewed as assurance that unusually large measurements will receive proper attention regardless of the outcome of those tests and that any area having the potential for significant dose contributions will be identified.

The LTP (by way of Equation 5-31) states that if residual radioactivity exists in an isolated area of elevated activity in addition to residual radioactivity distributed relatively uniformly across a survey unit, the unity rule will be used to ensure the total dose is within the release criterion. This is demonstrated in equation 3.

*Equation 3:*

$$\frac{\delta}{DCGL_w} + \frac{\bar{C}_{elevated} - \delta}{(AreaFactor) \times DCGL_w} < 1$$

Where:

$\delta$  = average concentration outside the elevated area,

$\bar{C}_{elevated}$  = average concentration in the elevated area.

A separate term will be used in Equation 3.0 for each elevated area in a survey unit.

#### 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. Guidance for preparing FSS plans is provided in Procedure RPM 5.1-11, "Preparation of Final Status Survey Plans".

This survey was initially designed to ten (10) mrem/yr TEDE. At the time when the survey was designed, the dose contribution for existing and future groundwater had not yet been determined. Subsequently, a conservative value

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was chosen for the design DCGL. This approach is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used for this survey unit to demonstrate compliance with the LTP criteria is nineteen (19) mrem/yr TEDE, as discussed in Section 3 of this Release Record.

The DQO process determined that Cs-137, Co-60 and Sr-90 were the radionuclides of concern (refer to Section 2). The sum of fractions or unity rule was used with the individual Operational DCGLs because multiple radionuclides (Cs-137, Co-60 and Sr-90) were considered in the survey design.

Surrogate DCGLs were not required for this survey unit based on process knowledge from FSS of nearby adjacent areas and via screening process described in LTP Section 5.4.7.2, "Gross Activity DCGLs". Sr-90 concentrations in sediment and soil were ascertained by direct analysis.

Radionuclide screening or de-selection is a process where an individual radionuclide or aggregate may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations that are less than 5% for individual radionuclides and that are less than 10% for the aggregate of all radionuclides that are de-selected. This process was applied to analysis data for this survey unit.

The EMC applies to this survey unit since it is a Class 1 area.

The Sign Test was selected as the non-parametric statistical test to demonstrate that the null hypothesis was rejected. The use of the Sign Test did not require the selection or use of a background reference area, which simplified survey design and implementation. In addition, this approach is conservative since it includes background Cs-137 as part of the sample set.

The number of sediment samples for FSS was determined in accordance with Procedure RPM 5.1-12, "*Determination of the Number of Samples for Final Status Survey.*" The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 0.394 to maintain the relative shift ( $\Delta/\sigma$ ) in the range of 1 and 3. The resulting relative shift was 1.1. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of MARSSIM in support of the decommissioning license termination rule (10 CFR 20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. This indicates that the survey unit has a high probability of rejecting the null hypothesis, assuming that the characterization data are representative of the FSS results. Survey design specified twenty-eight (28) sediment core samples for non-parametric statistical testing.

The grid pattern and locations of the sediment samples were determined using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, "*Identifying, and Marking Surface Sample Locations for Final Status Survey.*"

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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 1 area.

Sample locations were identified using AutoCAD-LT, a commercially available plotting software package with coordinates consistent with the Connecticut State Plane System. These coordinates were integrated with a GPS to locate sample locations in the field. Sample measurement locations for the design are listed with the GPS coordinates in Table 3.

<b>Table 3 - Sample Measurement Locations with Associated GPS Coordinates</b>		
<b>Designation</b>	<b>Northing</b>	<b>Easting</b>
9106-0015-001F	235153.65	672480.81
9106-0015-002F	235133.21	672445.41
9106-0015-003F	235133.21	672469.01
9106-0015-004F	235133.21	672492.61
9106-0015-005F	235112.77	672410.01
9106-0015-006F	235112.77	672433.61
9106-0015-007F	235112.77	672457.21
9106-0015-008F	235112.77	672480.81
9106-0015-009F	235112.77	672504.40
9106-0015-010F	235092.34	672421.81
9106-0015-011F	235092.34	672445.41
9106-0015-012F	235092.34	672469.01
9106-0015-013F	235092.34	672492.61
9106-0015-014F	235092.34	672516.20
9106-0015-015F	235071.90	672433.61
9106-0015-016F	235071.90	672457.21
9106-0015-017F	235071.90	672480.81
9106-0015-018F	235071.90	672504.40
9106-0015-019F	235071.90	672528.00
9106-0015-020F	235051.46	672445.41
9106-0015-021F	235051.46	672469.01
9106-0015-022F	235051.46	672492.61
9106-0015-023F	235051.46	672516.20
9106-0015-024F	235051.46	672539.80
9106-0015-025F	235031.02	672457.21
9106-0015-026F	235031.02	672480.81
9106-0015-027F	235031.02	672504.40
9106-0015-028F	235010.58	672469.01

Five (5) sediment samples were analyzed for the full suite of radionuclides specified in Table 1, exceeding the requirement to analyze 5% of the sample population for HTD analysis specified in procedure RPM 5.1-11. Three (3) of the five (5) samples were randomly selected using the Microsoft Excel "RAND"

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function. The two (2) samples exhibiting the highest observed radionuclide concentrations by gamma analyses were also selected.

The results of one (1) additional sample, number 9106-0007-017F, were included in this report as a result of the investigation that was conducted based on the results of the sample analyses.

The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey," required the collection of three (3) soil samples for "split sample" analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel "RAND" function. The number of quality control samples exceeded the 5% requirement as specified by the LTP.

Section 5.7.3.2.6 of the LTP specifies that scanning is not required for the FSS of the Discharge Canal. Table 4 provides a synopsis of the survey design.

<b>Table 4 – Synopsis of the Survey Design <sup>(1)</sup></b>		
<b>Feature</b>	<b>Design Criteria</b>	<b>Basis</b>
Survey Unit Land Area	1,170 m <sup>2</sup>	Based on AutoCAD-LT and Visual Sample Plan calculations
Number of Measurements <sup>(3)</sup>	26	Type 1 and Type 2 errors were 0.05, sigma was 0.552 the LBGR was set to 0.394 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 1.1
Grid Spacing	7.21 m	Based on triangular grid
Design DCGL	3.16 pCi/g Cs-137 1.52 pCi/g Co-60 0.62 pCi/g Sr-90	To achieve ten (10) mrem/yr TEDE
Operational DCGL	6.01 pCi/g Cs-137 2.90 pCi/g Co-60 1.18 pCi/g Sr-90	To achieve nineteen (19) mrem/yr TEDE <sup>(2)</sup> to demonstrate compliance with Equation 2 of this Release Record
Scan Coverage	N/A	The LTP exempts this area
Sediment Investigation Level	6.01 pCi/g Cs-137 2.90 pCi/g Co-60 1.18 pCi/g Sr-90	The Operational DCGL meets the LTP criteria for a Class 1 survey unit
Area between points	45 m <sup>2</sup>	The survey unit area divided by the number of direct measurements used to calculate the grid size. (1,170 m <sup>2</sup> /26 = 45 m <sup>2</sup> )

(1) The survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 as the total dose from existing and future groundwater had not been established at the time of planning the FSS

(2) The allowable dose for soil in this survey unit is nineteen (19) mrem/yr TEDE as the bounding dose from existing and future groundwater has been established based on field data (reference CY memo ISC 06-024.)

(3) The grid size selected was based on twenty-six (26) samples. However, the VSP run generated twenty-eight (28) measurement locations, each of the twenty-eight (28) measurements taken were used in the Sign Test.



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**5. SURVEY IMPLEMENTATION**

Final Status Survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0021. 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.

Measurement locations were identified in North American Datum (NAD) 1927 coordinates that were supplied to the sampling vendor, Ocean Surveys, Inc. (OSI) of Old Saybrook, Connecticut. Discharge Canal sampling was accomplished using direct push technology to collect composite samples of bottom and mean high water mark sediments. Sediment cores from the Discharge Canal were obtained by OSI using a vibrating corer that is platform mounted on a sampling vessel. The core barrel was a three (3) inch diameter thin-walled aluminum tube which also served as a core liner (ten (10) feet or less). A core catcher was available to prevent the sample from sliding out of the bottom of the tube. Vessel positioning and the determination of sample locations were accomplished using a GPS interfaced with a navigation and data logging system.

After extraction, water was drained from above the sample by drilling holes above the sediment. The liner was cut, capped, sealed, labeled and turned over to site personnel who processed and controlled the samples under Chain of Custody (COC) protocols in accordance with procedure RPM 5.1-5, "*Chain of Custody for Final Status Survey Samples.*" Rinsing of the barrel and associated equipment was performed between sampling events. New aluminum tubes were used for each sample to prevent cross-contamination of subsequent samples.

The twenty-eight (28) sediment samples were collected and packaged in accordance with Haddam Neck Plant (HNP) Procedure RPM 5.1-3, "*Collection of Sample Media for Final Status Survey*" and FSS design. Samples were controlled, transported, stored, and transferred to the off-site laboratory using COC protocols.

Five (5) samples (9106-0015-002F, 9106-0015-004F, 9106-0015-015F, 9106-0015-018F and 9106-0015-021F) of the total number of samples identified for non-parametric testing were selected for HTD radionuclide analysis by the off-site laboratory. A sixth sample, 9106-0007-017F, was originally collected and analyzed as part of Survey Unit 9106-0007. However, since the sample results exceeded the limits for a Class 2 survey unit, Survey Unit 9106-0015, a Class 1 survey unit, was created. The results of sample number 9106-0007-017F were included in this survey unit as a investigative sample result that required

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additional sampling and analysis and not for non-parametric testing purposes (refer to Section 8).

The implementation of quality control measures included the collection of three (3) split samples at locations (9106-0015-005F, 9106-0015-012F and 9106-0015-018F for comparative analysis by the off-site laboratory.

**6. SURVEY RESULTS**

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories (GEL) – Charleston, South Carolina. The laboratory analyzed the twenty-eight (28) samples taken for non-parametric statistical testing and the associated duplicates using gamma spectroscopy. Sr-90 was analyzed by liquid scintillation analyses. All analyses were performed to the required MDC.

Cs-137 was positively identified (i.e., a result greater than two (2) standard deviations uncertainty) in twenty-four (24), Co-60 was positively identified in twenty-one (21) and Sr-90 was positively identified in five (5) of the twenty-eight (28) samples.

Several other radionuclides, which were positively identified, could be de-selected or excluded using the 5% and 10% rule described in Section 5.4.7.2 of the LTP.

None of the sample results exceeded the Operational DCGL or required further investigation. A summary of the sample results is provided in Table 5.

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**Table 5- Summary of Sediment Sample Results**

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g	Fraction of the Operational DCGL <sup>(1)</sup>	
				Nuclides of concern	Unity (Sign Test) <sup>(2)</sup>
9106-0015-001F	2.560E-02	1.200E-02	2.480E-02	2.92E-02	8.33E-02
9106-0015-002F	5.220E-01	1.110E+00	-1.880E-02	4.54E-01	5.95E-01
9106-0015-003F	4.67E-02	1.42E-01	-3.33E-03	5.39E-02	1.08E-01
9106-0015-004F	-8.56E-03	9.74E-03	1.98E-02	1.86E-02	1.88E-02
9106-0015-005F	5.89E-02	9.29E-04	1.33E-02	2.13E-02	7.54E-02
9106-0015-006F	3.22E-01	3.50E-01	8.64E-03	1.82E-01	2.36E-01
9106-0015-007F	2.85E-01	3.55E-01	2.98E-03	1.72E-01	2.26E-01
9106-0015-008F	2.15E-01	3.49E-01	1.05E-02	1.65E-01	2.19E-01
9106-0015-009F	1.19E-02	3.23E-02	1.55E-02	2.61E-02	8.03E-02
9106-0015-010F	2.53E-01	0.00E+00	3.71E-03	4.52E-02	9.93E-02
9106-0015-011F	4.93E-01	3.96E-01	1.88E-02	2.34E-01	2.88E-01
9106-0015-012F	3.47E-01	6.55E-01	3.27E-03	2.86E-01	3.40E-01
9106-0015-013F	4.43E-01	7.05E-01	5.00E-03	3.21E-01	3.75E-01
9106-0015-014F	4.43E-02	4.32E-02	2.22E-02	4.09E-02	9.90E-02
9106-0015-015F	2.08E-01	7.07E-02	2.11E-02	7.67E-02	4.79E-02
9106-0015-016F	3.02E-01	1.01E-01	-2.59E-03	8.29E-02	1.37E-01
9106-0015-017F	4.74E-01	2.90E-01	4.49E-03	1.83E-01	2.37E-01
9106-0015-018F	3.54E-01	1.16E+00	-1.15E-02	4.49E-01	4.72E-01
9106-0015-019F	9.01E-02	2.38E-01	9.59E-03	1.05E-01	1.59E-01
9106-0015-020F	9.79E-02	2.03E-01	-8.28E-03	7.93E-02	1.33E-01
9106-0015-021F	3.98E-01	0.00E+00	-1.17E-02	5.64E-02	7.43E-02
9106-0015-022F	3.46E-01	6.97E-01	2.53E-03	3.00E-01	3.54E-01
9106-0015-023F	3.28E-01	1.06E+00	-1.20E-02	4.10E-01	4.64E-01
9106-0015-024F	6.71E-02	1.15E-01	2.52E-02	7.20E-02	1.03E-01
9106-0015-025F	1.17E-02	-3.63E-03	1.28E-02	1.15E-02	4.25E-02
9106-0015-026F	3.23E-01	5.75E-02	6.51E-03	7.90E-02	1.10E-01
9106-0015-027F	2.73E-01	1.39E-01	3.14E-03	9.60E-02	1.27E-01
9106-0015-028F	4.90E-03	-3.79E-03	-1.53E-02	-1.33E-02	1.77E-02

(1) The Operational DCGLs from Table 2 are 6.01 pCi/g for Cs-137, 2.90 pCi/g for Co-60, 1.18 pCi/g for Sr-90; the Operational DCGL for C-14, a HTD radionuclide identified in one (1) or more FSS samples analyzed for HTD, is 4.30 pCi/g. These values were used in conjunction with the unity rule to achieve nineteen (19) mrem/yr TEDE.

(2) This column is the sum of the DCGL unity fraction from identified radionuclides of concern and HTD isotope(s) exceeding the 5%/10% rule for one (1) or more FSS samples. For those samples not measured for HTD isotopes, an average calculated value of 3.1% of the DCGL was added to each sample.

The off-site laboratory also processed a total of five (5) samples, collected for non-parametric testing, for HTD analysis as required by the sample plan.

Sample number 9106-0007-017F was including in this report for the following reasons; because the sample result exceeded the Operational DCGL, the sample

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result precipitated the creation of this survey unit, and as a part of the investigation relating to this sample to ensure that it complies the DCGL<sub>EMC</sub> comparison Test of Section 5 of the LTP.

The analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC.

Three (3) of the five (5) samples collected for non-parametric testing, and analyzed for HTD radionuclides, met the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty. Each of the positive results for HTD radionuclides could be de-selected based on the 5% and 10% rules, with the exception of one (1) sample, 9106-0015-002F, which exceeded the 10% rule for a total of four (4) HTD radionuclides. Based on the HTD analyses, the maximum dose impact from these results was added to Table 5.

The HTD results are presented in Table 6.

<b>Table 6 - Hard-to-Detect Sample Results</b>					
Sample Number (9106-)	C-14 ( $\mu\text{Ci/g}$ )	Tc-99 ( $\mu\text{Ci/g}$ )	Am-241 ( $\mu\text{Ci/g}$ )	Pu-241 ( $\mu\text{Ci/g}$ )	Fraction of Operational DCGL <sup>(1)(2)</sup>
0015-002F	2.07E-01	3.90E-01	2.92E-01	2.46E+01	0.1409
0015-004F	8.18E-03	0.00E+00	0.00E+00	0.00E+00	0.0019
0015-015F	-1.24E-01	0.00E+00	0.00E+00	0.00E+00	-0.0288
0015-018F	5.72E-02	0.00E+00	1.93E-01	0.00E+00	0.0232
0015-021F	-4.90E-02	2.81E-01	0.00E+00	0.00E+00	0.0179
0007-017F <sup>(3)</sup>	3.04E-02	1.20E-01	3.00E-03	-1.93E+00	0.0218

(1) The Operational DCGLs for C-14 is 4.30  $\mu\text{Ci/g}$ , Tc-99 is 9.58  $\mu\text{Ci/g}$ , Am-241 is 19.6  $\mu\text{Ci/g}$ , and Pu-241 is 661  $\mu\text{Ci/g}$ . These values were used in conjuncture with the unity rule to achieve nineteen (19) mrem/yr TEDE.

(2) This column is the sum of the DCGL unity fraction from identified HTD radionuclides identified in one (1) or more FSS samples.

(3) Sample number 9106-0007-017F was the initiating sample for the generation of this survey unit. This sample was analyzed for HTD radionuclides as part of the investigative process for an EMC. The results of the sample analyses of 9106-0007-017F were not included in the results of sample analyses conducted for non-parametric testing. (sample 9106-0007-017F was not taken as a part of the sample design for this survey unit).

**7. QUALITY CONTROL**

The three (3) split samples taken for QC were analyzed by the off-site laboratory. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 and as detailed in HNP Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey."

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One (1) split-sample (9106-0015-005F/S) did not meet the comparison criterion for Cs-137. A possible cause for this anomaly could be the presence of Cs-137 tightly bound to organic material in the sample aliquot. This distribution of material does not lend itself to homogenous mixing in a sediment matrix and, therefore, is not necessarily an indicator of inadequate sampling or sample preparation methodology. Additionally, since the resolution ratios for both Co-60 and Sr-90 were less than four (4), and the USNRC Inspection Procedure 84750 does not give guidance on resolution ratios below four (4), a determination on acceptability for such ratios can not be made. In this sample, K-40, a natural radioisotope, was found to be present at an acceptable level of agreement; therefore, the comparison was determined to be acceptable.

For the other two (2) QC split samples (9106-0015-012F/S & 9106-0015-018F/S), there was an acceptable level of agreement between the samples for Cs-137, Co-60 and K-40. However, the resolution ratio for Sr-90 was less than four (4), and the USNRC Inspection Procedure 84750 does not give guidance on resolution ratios below four (4), a determination on acceptability for such ratios can not be made.

The sample analysis vendor, GEL, maintained 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**

One (1) sample result, that led to the creation of this survey unit, was found to exceed the Operational DCGL of nineteen (19) mrem/yr, exceeding the investigation level from Table 4. Thus an investigation was required to determine compliance with Equation 3 of Section 3.

The first step in determining whether compliance with the EMC unity rule is to determine the area extent of the elevated measurement region. This was done by taking investigation samples at a distance of one (1) meter in each of the four (4) compass directions about the elevated sample point (9106-0007-017F). When these sample results were determined to be below the investigation levels specified in Table 4, the area was said to be bounded.

The area of the elevated measurement location (also the area used to determine area factors) was conservatively calculated by assuming the area was a circle with a radius equal to the most distant bounding measurement location. This was done using actual GPS log data. This was the most prudent approach since maneuvering the sampling vessel to obtain samples within such closely spaced locations imposes unusually high positioning precision. Table 7 provides sample measurement location information (in NAD 1927) and distances from sample location 9106-0007-017F.

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**Table 7 – Investigation Sample Measurement Locations with Associated GPS Coordinates**

Designation	Northing	Easting	Distance from 9106-0007-017F (m)
9106-0007-017F	235080.50	672486.69	-
9106-0015-017A	235083.20	672486.95	0.827309
9106-0015-017B	235080.67	672489.39	0.825131
9106-0015-017C	235076.99	672487.21	1.082234
9106-0015-017D	235081.57	672483.02	1.165954
<b>Area (m<sup>2</sup>)</b>			<b>4.3</b>

Since the bounded area was determined to be 4.3 m<sup>2</sup>, the Area Factor (AF) values from Table 5-5 of the LTP for six (6) m<sup>2</sup> were conservatively applied to determine the DCGL<sub>EMC</sub> for each nuclide. With this information, it is possible to assess compliance with the EMC rule. This is demonstrated in Table 8. A map of the investigative sample locations is provided in Figure 6 of Attachment 1.

**Table 8- Investigation Results**

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g	Fraction of the Operational DCGL
Area Factor (6 m <sup>2</sup> )	7.01	3.29	211	<b>Nuclides of concern<sup>(1)</sup></b>
DCGL <sub>EMC</sub>	4.21E+01	9.53E+00	2.49E+02	
0007-017F	6.42E-01	3.09E+00	8.94E-03	
0015-017A	3.65E-01	1.02E+00	-1.08E-02	
0015-017B	1.92E-01	3.57E-01	3.32E-03	
0015-017C	1.95E-01	2.45E-01	4.84E-03	
0015-017D	3.13E-01	8.95E-01	-3.67E-03	
$\delta$	2.26E-01	2.96E-01	5.37E-03	
<b>Fraction of the DCGL<sub>EMC</sub></b>				
$\bar{C}_{elevated}$	3.41E-01	1.12E+00	5.26E-04	<b>Nuclides of concern<sup>(1)</sup></b>
$\bar{C}_{elevated} - \delta$	1.15E-01	8.26E-01	-4.84E-03	
$\frac{\bar{C}_{elevated} - \delta}{DCGL_{EMC}}$	2.74E-03	8.67E-02	-1.95E-05	
<b>Hard-to-Detect (HTD) Results<sup>(2)</sup></b>				<b>3.10E-02</b>
<b>Total</b>				<b>2.64E-01</b>

(1) This represents the unity fraction of the DCGL from nuclides that are considered nuclides of concern (Cs-137, Co-60 and Sr-90) from the FSS plan.

(2) This represents the unity fraction of the DCGL from HTD nuclides that were not considered nuclides of concern from the FSS plan, and represents an increase of 3.1%. These values were not subtracted from the mean activity of the elevated area, which is conservative.

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RELEASE RECORD

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**9. REMEDIATION AND RESULTS**

Historically, no radiological remedial action as described by MARSSIM Section 5.4 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 survey was designed to ten (10) mrem/yr TEDE which was conservative and necessary at the time of FSS planning. It is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used to demonstrate compliance with the LTP and CTDEP criteria is nineteen (19) mrem/yr TEDE as discussed in Section 2 of this Release Record.

**11. DATA QUALITY ASSESSMENT (DQA)**

The DQO sample design and data were reviewed in accordance with Procedure RPM 5.1-23, "*Data Quality Assessment*." The sample 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. The evaluation of the Sign Test results indicates that the survey unit passes the unrestricted release criterion, thus, the null hypothesis is rejected.

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 1.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The standard deviation was slightly more than the value used for the survey design. This is represented by the shift in the retrospective power curve as shown in Attachment 2f. This would indicate a need to change the original LBGR in order to maintain the number of samples at twenty-eight (28) to meet the Operational DCGL. However, the value of LBGR is not a critical issue as the survey unit has passed the statistical test, and the mean and median values are well below the Operational DCGL when used in conjunction with the unity rule. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criterion with adequate power as required by the DQOs

The range of the data, about 3.47 standard deviations, was not unusually large. The difference between the mean and median was 42.2% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot shows some positive skewness as confirmed by the calculated skew of 1.09.

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The survey area had one (1) elevated measurement location, which was evaluated using the unity EMC test. This resulted in a passing value of 0.264, which is significantly below unity.

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

**12. ANOMALIES**

The anomalies associated with a disagreement on one (1) of the field splits has been discussed in Section 7. The source of the disagreement for Cs-137 is believed to be due to Cs-137 being tightly bound to organic materials in the sample media. Such a physical form does not lend itself to homogenous mixing in a sediment matrix.

**13. CONCLUSION**

Survey Unit 9106-0015 has demonstrated compliance with the dose based, unrestricted release criterion. The sample data passed the Sign Test and the null hypothesis was rejected. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Reclassification and remediation of this survey unit was not required.

Graphical representation of data indicates some positive skewness that is probably due to localized differences in particulate deposition rates, hydraulic velocity and sedimentation rates. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit was properly designated as a Class 1 survey unit.

The dose contribution from sediment in this survey unit is 3.1 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

This survey unit is not affected by existing groundwater (reference CY memo ISC 06-024). It has been determined that the dose contribution from groundwater sources is bounded by zero (0) mrem/yr TEDE.

This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no concrete foundations or footings containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater, the third dose component is, therefore, zero (0) mrem/yr TEDE.

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 3.1 mrem/yr Total Effective Dose Equivalent (TEDE).



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**14. ATTACHMENTS**

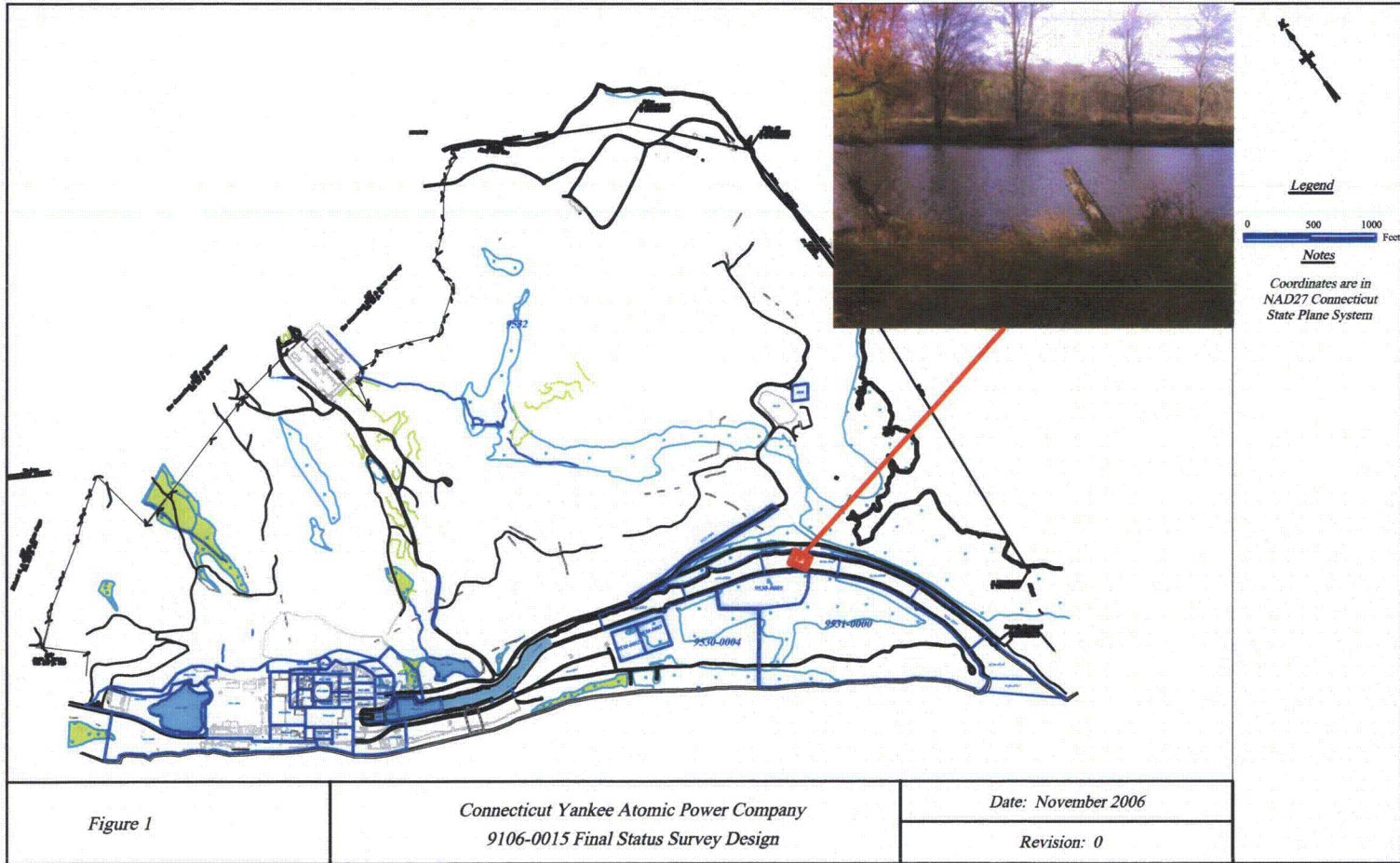
14.1 Attachment 1 – Figures

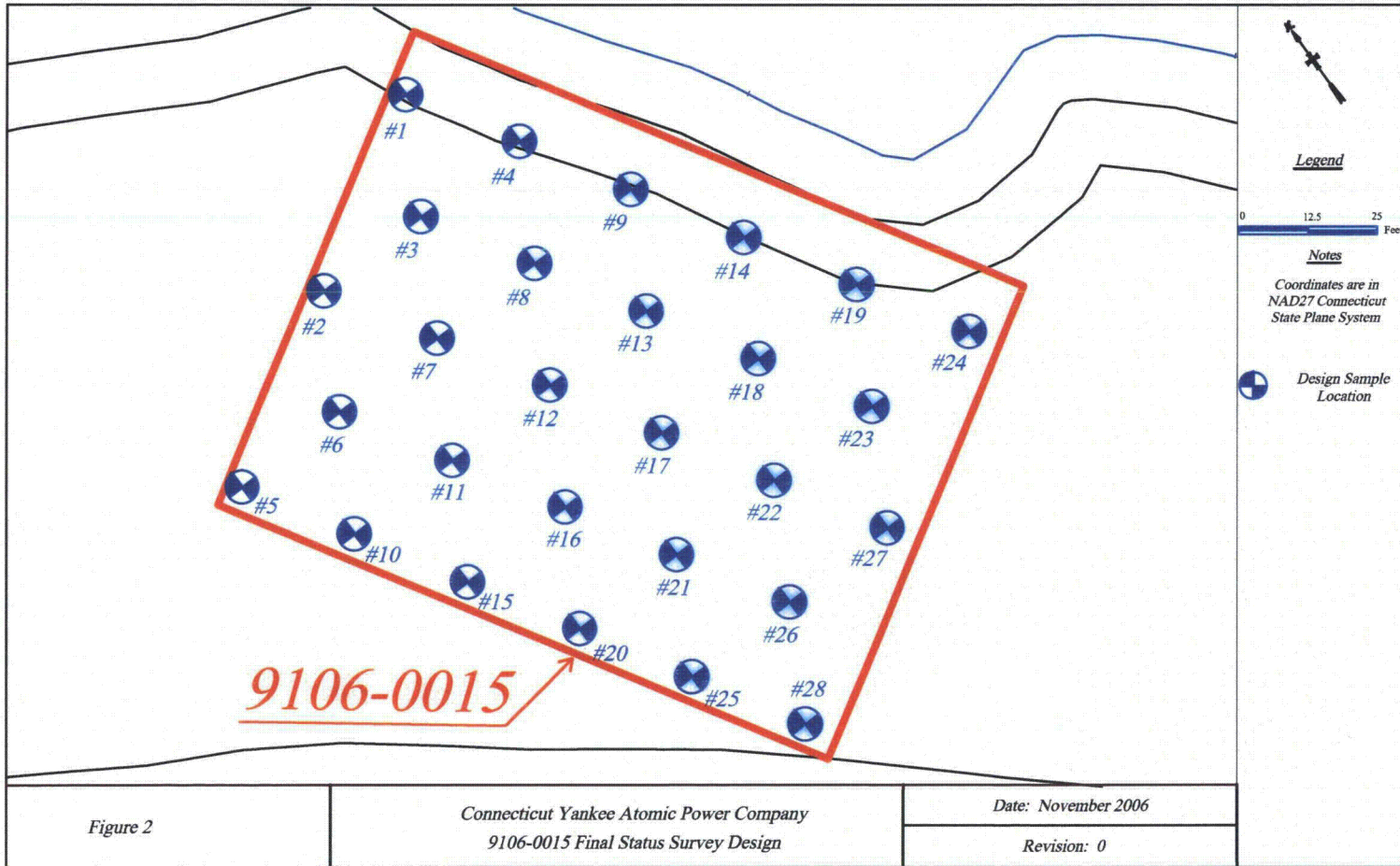
14.2 Attachment 2 – Sample and Statistical Data

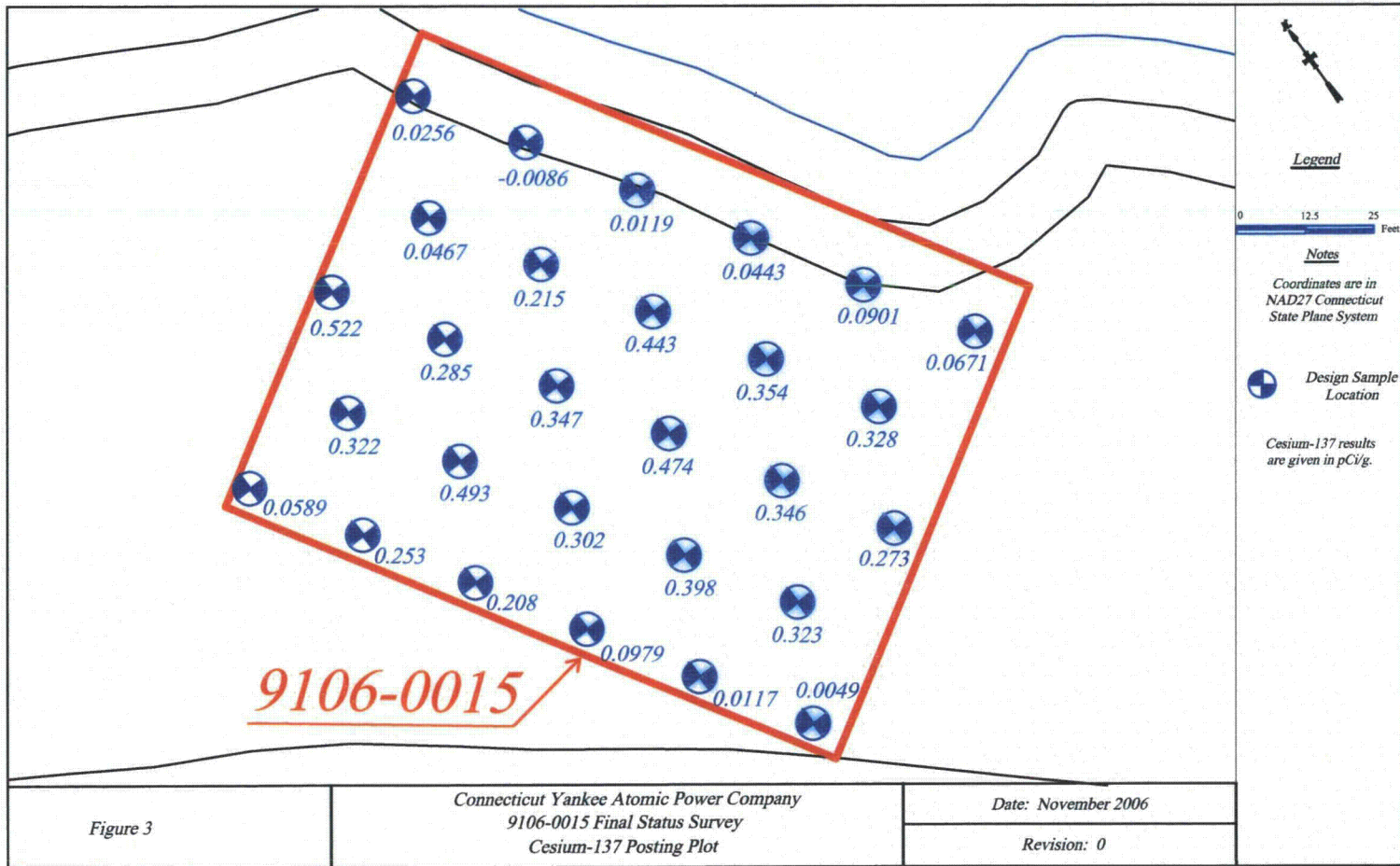
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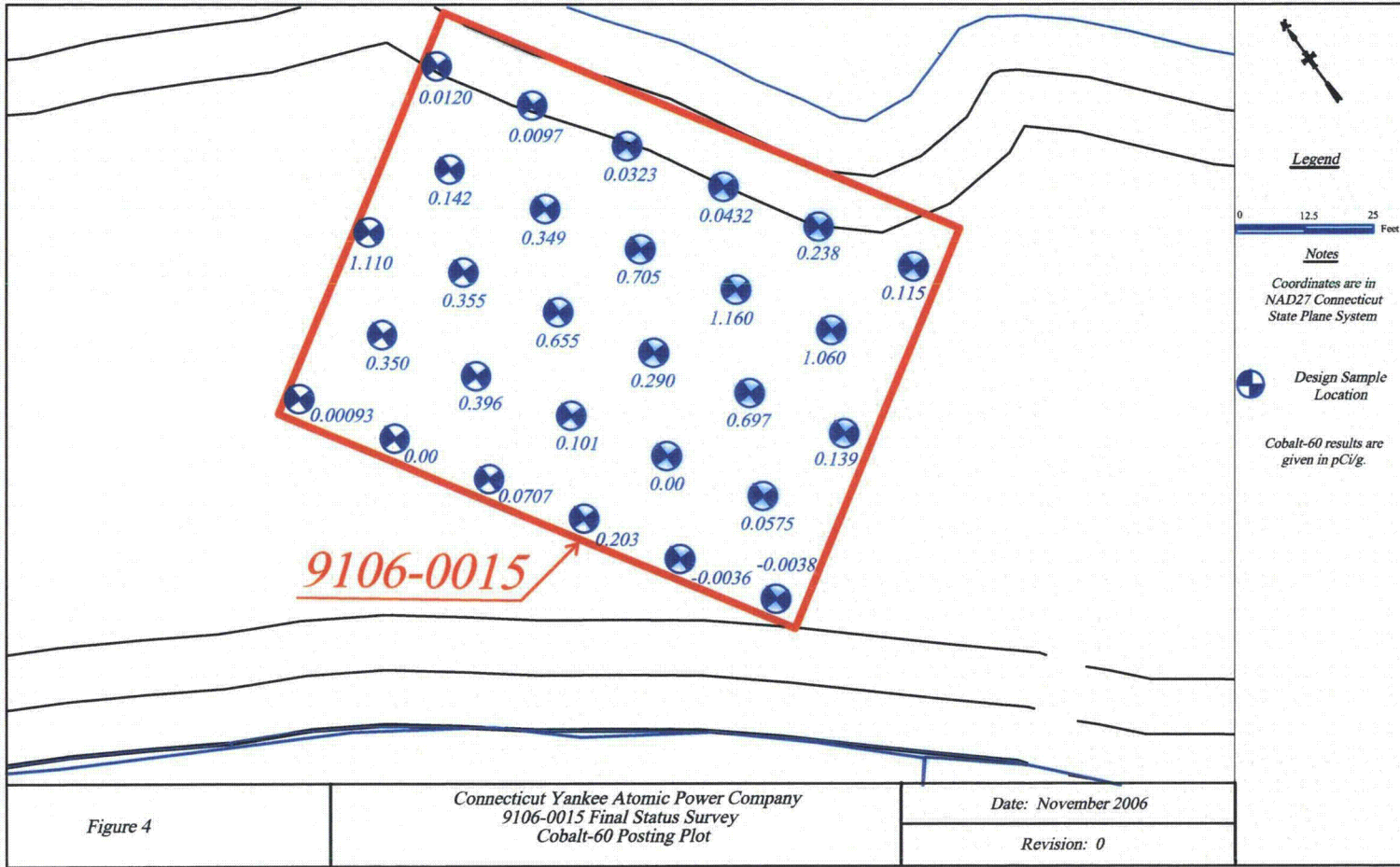
Attachment 1  
Figures  
(9 pages)

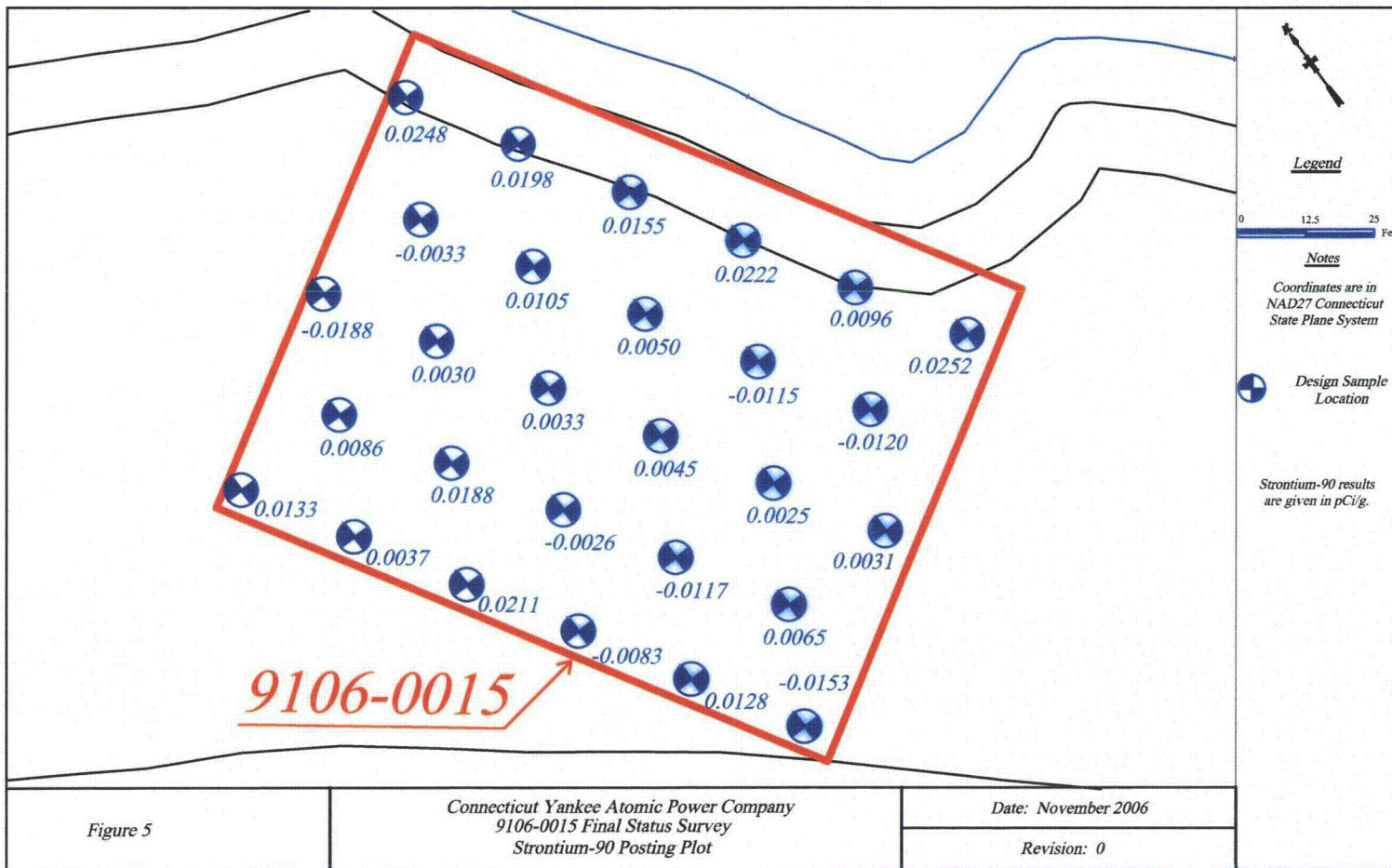


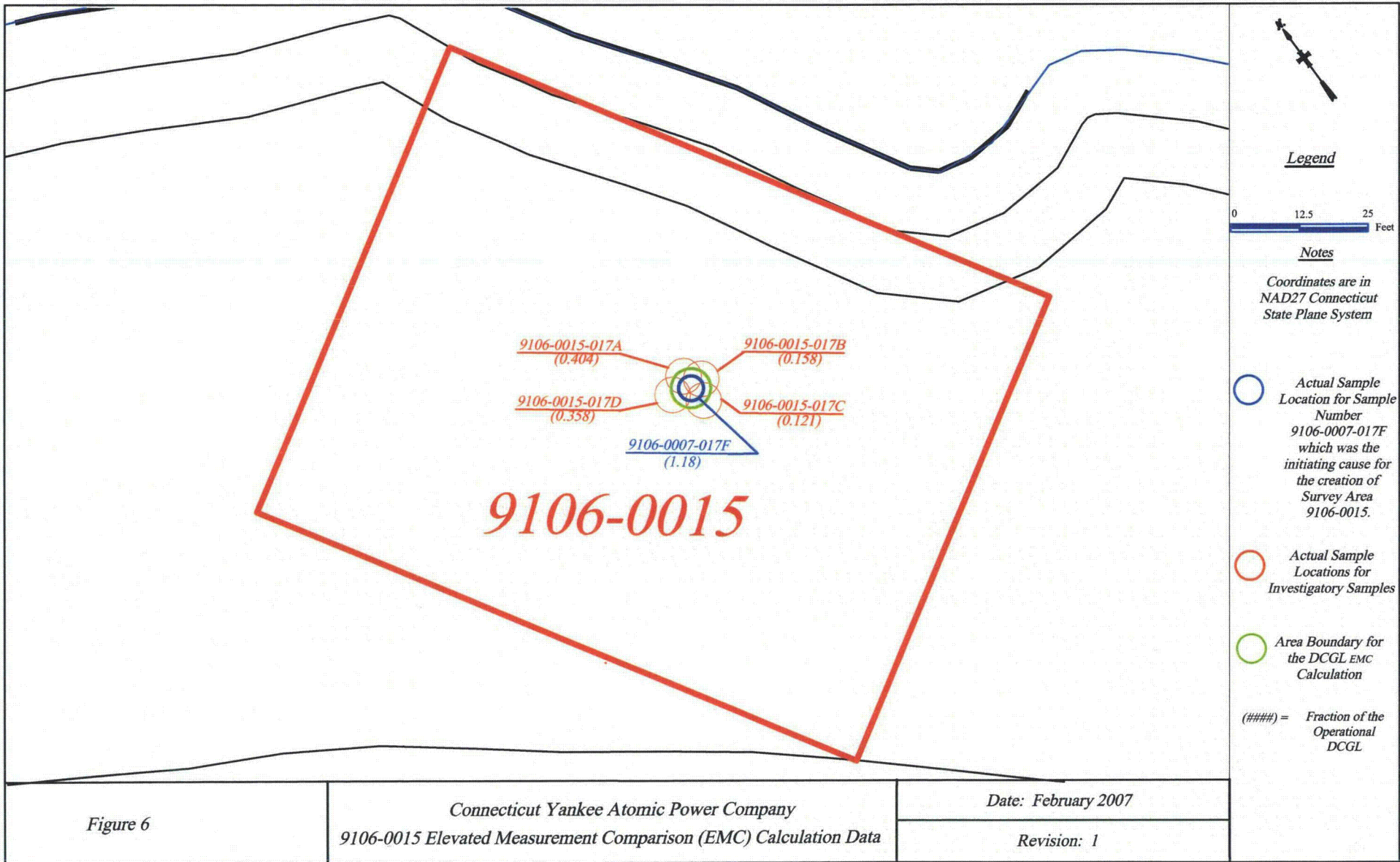




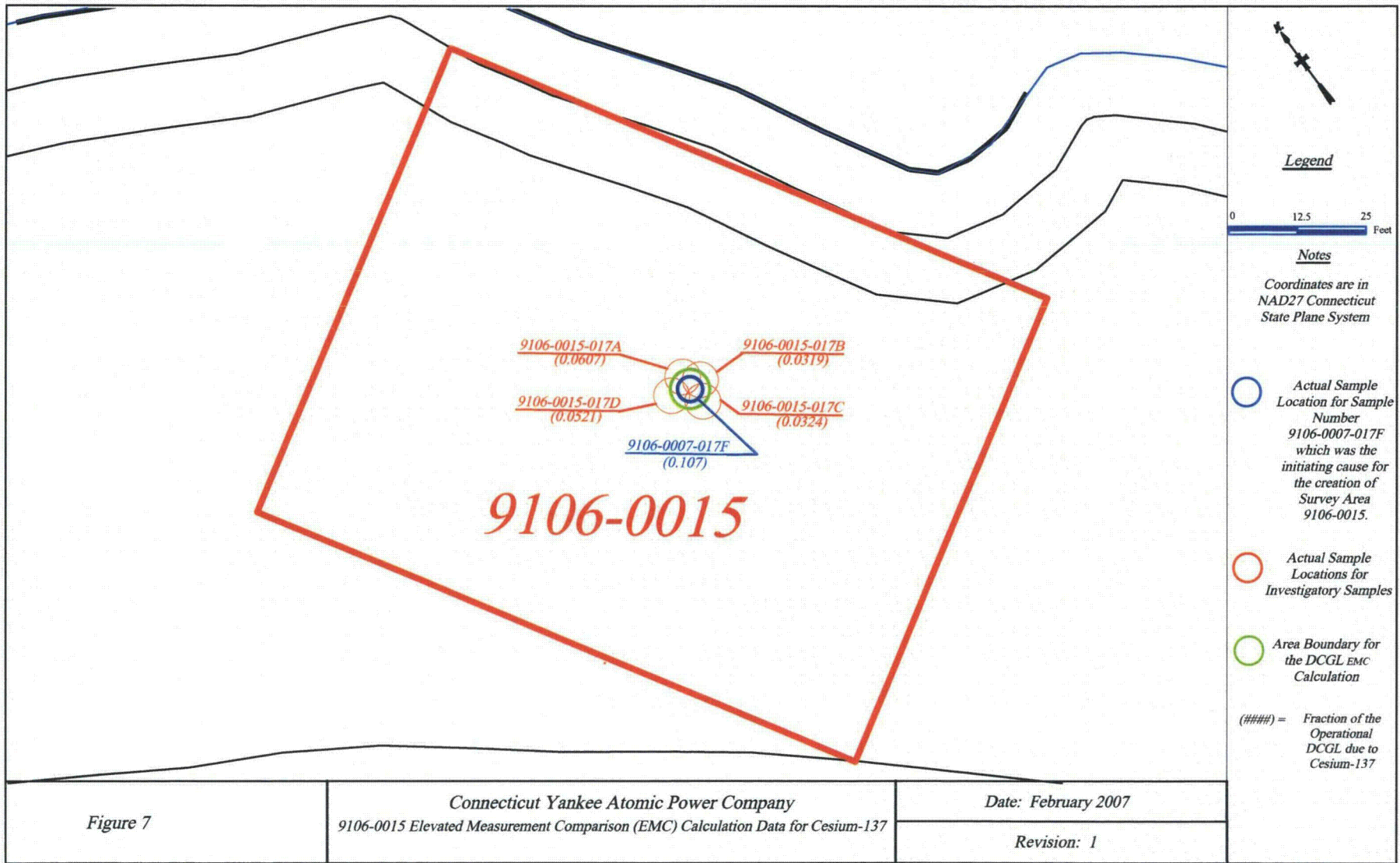


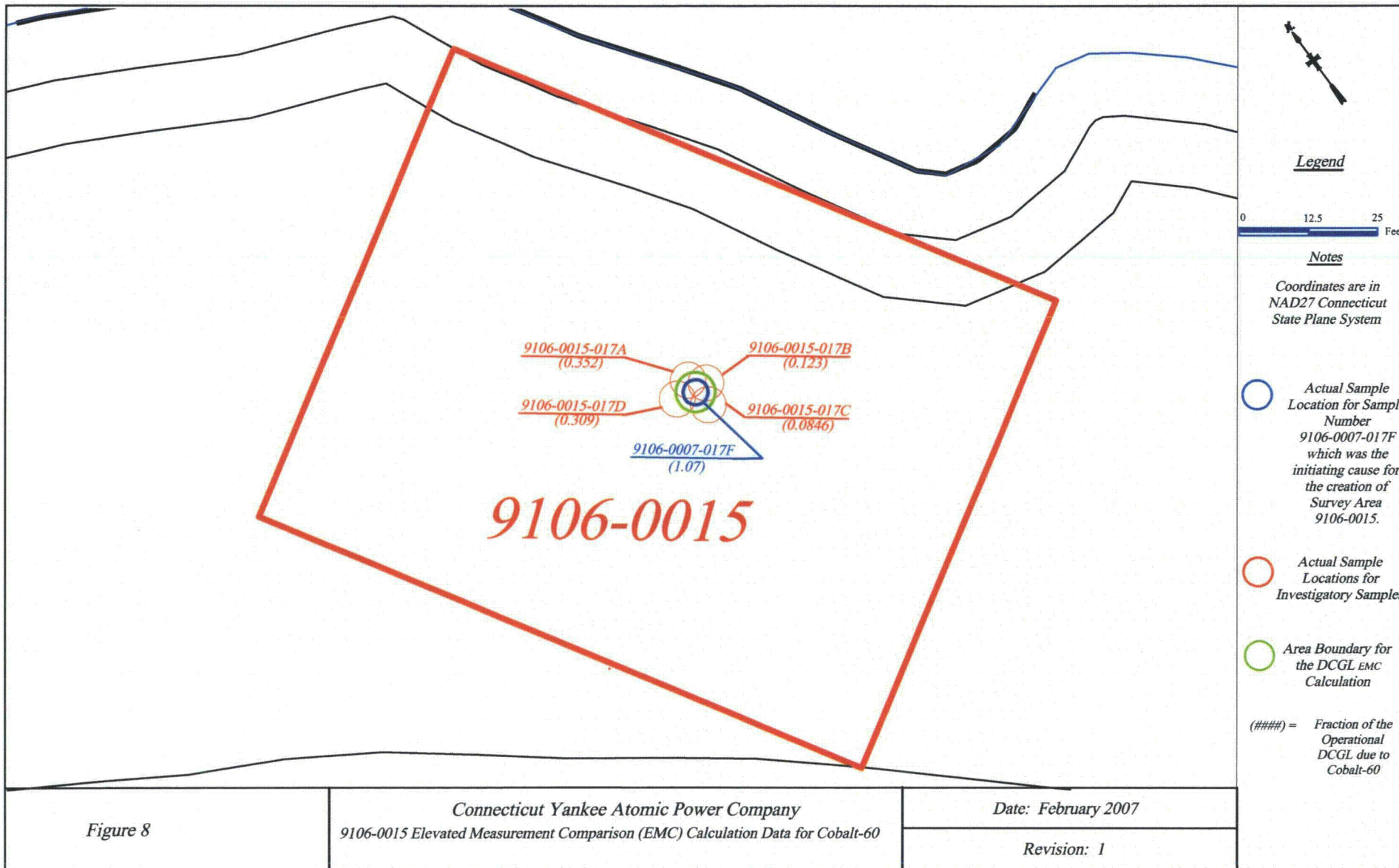


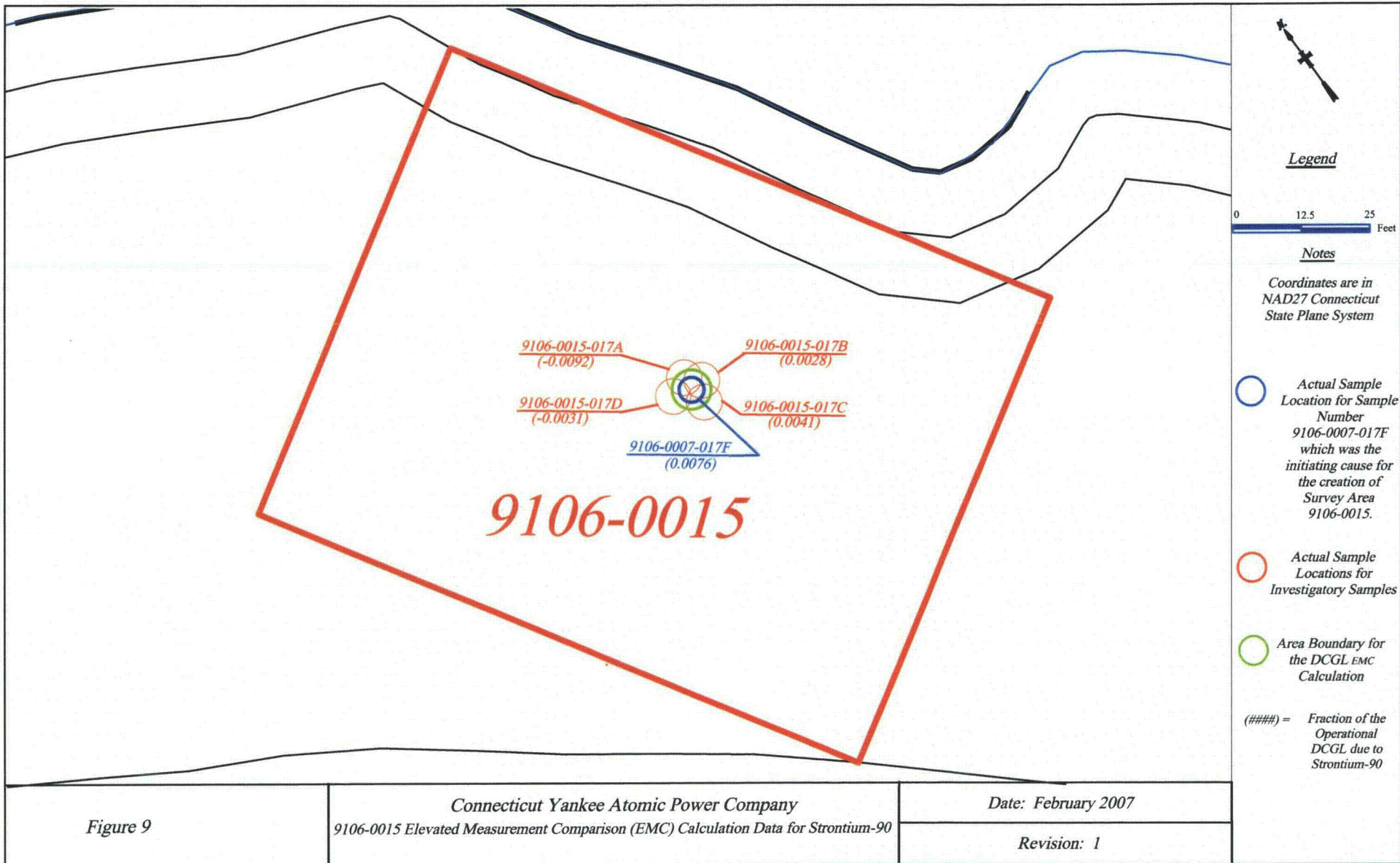












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Attachment 2  
Sample and Statistical Data

DISCHARGE CANAL  
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Attachment 2a  
Sample Data  
(294 Pages)

## Table of Contents

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# **General Narrative**

**CASE NARRATIVE**  
**For**  
**CONNECTICUT YANKEE**  
**RE: Soil**  
**PO# 002332**  
**Work Order: 167556**  
**SDG: MSR #06-1037**

**August 2, 2006**

**Laboratory Identification:**

General Engineering Laboratories, LLC

**Mailing Address:**

P.O. Box 30712  
Charleston, South Carolina 29417

**Express Mail Delivery and Shipping Address:**

2040 Savage Road  
Charleston, South Carolina 29407

**Telephone Number:**

(843) 556-8171

**Summary:**

**Sample receipt**

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on July 21, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<b><u>Sample ID</u></b>	<b><u>Client Sample ID</u></b>
167556001	9106-0015-022F
167556002	9106-0015-023F
167556003	9106-0015-024F
167556004	9106-0015-026F
167556005	9106-0015-027F
167556006	9106-0015-028F
167556007	9106-0015-018F
167556008	9106-0015-025F
167556009	9106-0015-001F



167556010	9106-0015-002F
167556011	9106-0015-003F
167556012	9106-0015-005F
167556013	9106-0015-006F
167556014	9106-0015-007F
167556015	9106-0015-008F
167556016	9106-0015-009F
167556017	9106-0015-010F
167556018	9106-0015-011F
167556019	9106-0015-012F
167556020	9106-0015-013F
167556021	9106-0015-014F
167556022	9106-0015-016F
167556023	9106-0015-017F
167556024	9106-0015-019F
167556025	9106-0015-020F
167556026	9106-0015-005FS
167556027	9106-0015-012FS
167556028	9106-0015-018FS
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F

**Items of Note:**

There are no items of note.

**Case Narrative:**

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

**Analytical Request:**

Twenty-eight soil samples were analyzed for FSSGAM and Sr-90.  
Three soil samples were analyzed for FSSALL.

**Internal Chain of Custody:**

Custody was maintained for the sample(s).

**Data Package:**

The enclosed data package contains the following sections: Case Narrative, Chain of Custody and Supporting Documentation and all analytical fractions.

I certify that this data package 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.



Cheryl Jones  
Project Manager

**Chain of Custody  
and  
Supporting  
Documentation**

167556/.

Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						Chain of Custody Form					No. 2006-00443			
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL	Sr-90	Ni-63	Comments:				
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Comment, Preservation		Lab Sample ID									
1 9106-0015-022F	6-27-06	16:24	SE	C	BP	X		X						
2 9106-0015-023F	6-27-06	16:03	SE	C	BP	X		X						
3 9106-0015-024F	6-27-06	15:42	SE	C	BP	X		X						
4 9106-0015-026F	6-27-06	14:58	SE	C	BP	X		X						
5 9106-0015-027F	6-27-06	15:17	SE	C	BP	X		X						
6 9106-0015-028F	6-27-06	14:31	SE	C	BP	X		X						
7 9106-0015-018F	6-27-06	17:18	SE	C	BP	X		X						
8 9106-0015-025F	6-27-06	16:43	SE	C	BP	X		X						
9 9106-0015-021F	6-27-06	17:01	SE	C	BP		X							

NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA  LTP QA  Radwaste QA  Non QA

Samples Shipped Via:  
 Fed Ex  
 UPS  
 Hand  
 Other

Internal Container Temp.: 22 Deg. C  
 Custody Sealed? Y  N   
 Custody Seal Intact? Y  N

1) Relinquished By <u>JAIME RICAUTE</u>	Date/Time <u>7-20-06/1445</u>	2) Received By <u>K. Wright</u>	Date/Time <u>7/20/06 0930</u>
3) Relinquished By	Date/Time	4) Received By	Date/Time

Bill of Lading #  
7910 57 11 1301

167556/.

**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00448

Project Name: Haddam Neck Decommissioning			Analyses Requested				Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924			Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL	Sr-90	Comments
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones									
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.									

Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL	Sr-90	Comment, Preservation	Lab Sample ID
18 9106-0015-011F	6-28-06	14:39	SE	C	BP	X		X		
19 9106-0015-012F	6-28-06	10:58	SE	C	BP	X		X		
20 9106-0015-013F	6-28-06	10:04	SE	C	BP	X		X		
21 9106-0015-014F	6-28-06	09:05	SE	C	BP	X		X		
31 9106-0015-015F	6-28-06	08:25	SE	C	BP		X			
22 9106-0015-016F	6-28-06	08:46	SE	C	BP	X		X		
23 9106-0015-017F	6-28-06	09:47	SE	C	BP	X		X		
24 9106-0015-019F	6-28-06	09:25	SE	C	BP	X		X		
15 9106-0015-020F	6-28-06	07:59	SE	C	BP	X		X		

NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA  LTP QA  Radwaste QA  Non QA

Samples Shipped Via:  
 Fed Ex  
 UPS  
 Hand  
 Other

Internal Container Temp: 21 Deg. C  
 Custody Sealed? Y  N   
 Custody Seal Intact? Y  N

1) Relinquished By JAIME RICARTE	Date/Time 7-20-06/1445	2) Received By K. LeFright	Date/Time 7/21/06 0930
3) Relinquished By	Date/Time	4) Received By	Date/Time

Bill of Lading #  
7910 5711 1286

1167556/.

Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						Chain of Custody Form					No. 2006-00447			
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL	Sr-90					Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Comment, Preservation		Lab Sample ID									
9106-0015-001F	6-28-06	13:36	SE	C	BP	X		X						
9106-0015-002F	6-28-06	14:15	SE	C	BP	X		X						
9106-0015-003F	6-28-06	13:15	SE	C	BP	X		X						
9106-0015-004F	6-28-06	12:54	SE	C	BP		X							
9106-0015-005F	6-28-06	15:47	SE	C	BP	X		X						
9106-0015-006F	6-28-06	16:10	SE	C	BP	X		X						
9106-0015-007F	6-28-06	11:33	SE	C	BP	X		X						
9106-0015-008F	6-28-06	11:10	SE	C	BP	X		X						
9106-0015-009F	6-28-06	10:25	SE	C	BP	X		X						
9106-0015-010F	6-28-06	15:17	SE	C	BP	X		X						
NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp: 23 Deg. C  Custody Sealed? Y <input type="checkbox"/> N <input checked="" type="checkbox"/>  Custody Seal Intact?  Y <input type="checkbox"/> N <input type="checkbox"/>		
1) Relinquished By JAYME RICARTE			Date/Time 7-20-06 / 1445			2) Received By D. Lefright			Date/Time 7/21/06 0930			Bill of Lading # 791057111220		
3) Relinquished By			Date/Time			4) Received By			Date/Time					

167556/.

**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00468

Project Name: Haddam Neck Decommissioning						Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL	Sr-90	Comments				
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.													
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code						Comment, Preservation	Lab Sample ID	
126 9106-0015-005FS	6-28-06	15:47	SE	C	BP	X		X					
270 9106-0015-012FS	6-28-06	10:58	SE	C	BP	X		X					
28 9106-0015-018FS	6-27-06	17:18	SE	C	BP	X		X					
NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp: 21 Deg. C Custody Sealed? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
1) Relinquished By JAMES HUARTE			Date/Time 7-20-06/1445			2) Received By K. Wright			Date/Time 7/21/06 0930				
3) Relinquished By			Date/Time			4) Received By			Date/Time			Bill of Lading # 7910 5711 1286	



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Vank.</u>	SDG/ARCOC/Work Order: <u>167554, 167555, 167556</u>
Date Received: <u>7/21/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>[Signature]</i>
Received By: <i>[Signature]</i>	

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	/			Circle Coolant # ice bags blue ice dry ice <u>none</u> other (describe) <u>See Cont. Sheet.</u>
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/	
8	Samples received within holding time?	/			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?			/	Sample ID's and containers affected: <u>See Cont. Sheet</u>
10	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11	Number of containers received match number indicated on COC?	/			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	/			

14 Air Bill ,Tracking #'s, & Additional Comments See sheet

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?	/			Maximum Counts Observed*: <u>cpm 40</u>
B PCB Regulated?	/			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: \_\_\_\_\_ Initials *[Signature]* Date: 7/21/06



Figure 1. Sample Check-in List

Date/Time Received: 7/21/06 0930  
SDG#: MSR#06-1035, MSR#06-1036, MSR#06-1037  
Work Order Number: 167556  
Shipping Container ID: See Cont. Sheet Chain of Custody #: See Cont. Sheet

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No  N/A
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature See Cont. Sheet
5. Vermiculite/packing materials is: Wet  Dry  N/A
6. Number of samples in shipping container: See Cont. Sheet
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No
11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: K. W. Flight Date: 7/21/06  
Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# **RADIOLOGICAL ANALYSIS**

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 167556**

**Method/Analysis Information**

**Product:** Alphaspec Am241, Cm, Solid ALL FSS  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 552678  
**Prep Batch Number:** 550566  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 550554

<b>Sample ID</b>	<b>Client ID</b>
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201146077	Method Blank (MB)
1201146078	167555016(9106-0013-004F) Sample Duplicate (DUP)
1201146079	167555016(9106-0013-004F) Matrix Spike (MS)
1201146080	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167555016 (9106-0013-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Alphaspec Pu, Solid-ALL FSS  
 Analytical Method: DOE EML HASL-300, Pu-11-RC Modified  
 Prep Method: Ash Soil Prep  
 Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep  
 Analytical Batch Number: 550872  
 Prep Batch Number: 550566  
 Dry Soil Prep GL-RAD-A-021 Batch Number: 550554

Sample ID	Client ID
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141927	Method Blank (MB)
1201141928	167555016(9106-0013-004F) Sample Duplicate (DUP)
1201141929	167555016(9106-0013-004F) Matrix Spike (MS)
1201141930	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167555016 (9106-0013-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Pu241, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	550873
Prep Batch Number:	550566
Dry Soil Prep GL-RAD-A-021 Batch Number:	550554

<b>Sample ID</b>	<b>Client ID</b>
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141931	Method Blank (MB)
1201141932	167555016(9106-0013-004F) Sample Duplicate (DUP)
1201141933	167555016(9106-0013-004F) Matrix Spike (MS)
1201141934	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167555016 (9106-0013-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**



Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Gamma,Solid-FSS GAM &amp; ALL FSS 226 Ingrowth Waived</b>
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	551078
Prep Batch Number:	550552

<b>Sample ID</b>	<b>Client ID</b>
167556001	9106-0015-022F
167556002	9106-0015-023F
167556003	9106-0015-024F
167556004	9106-0015-026F
167556005	9106-0015-027F
167556006	9106-0015-028F
167556007	9106-0015-018F
167556008	9106-0015-025F
167556009	9106-0015-001F
167556010	9106-0015-002F
167556011	9106-0015-003F
167556012	9106-0015-005F
167556013	9106-0015-006F
167556014	9106-0015-007F
167556015	9106-0015-008F
167556016	9106-0015-009F
167556017	9106-0015-010F
167556018	9106-0015-011F
167556019	9106-0015-012F
167556020	9106-0015-013F
1201142453	Method Blank (MB)
1201142454	167556001(9106-0015-022F) Sample Duplicate (DUP)
1201142455	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 11.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167556001 (9106-0015-022F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

The sample and the duplicate, 1201142454 (9106-0015-022F) and 167556001 (9106-0015-022F), did not meet the relative percent difference requirement for Ac-228 and Cs-137, however, they do meet the relative error ratio requirement with a value of 2.29 for Ac-228 and 2.54 for Cs-137.

**Qualifier information**

<b>Qualifier</b>	<b>Reason</b>	<b>Analyte</b>	<b>Sample</b>
UI	Data rejected due to interference.	Europium-155	167556002 167556003 167556010
		Manganese-54	167556003
UI	Data rejected due to low abundance.	Bismuth-212	167556017
		Cesium-134	167556003 167556015 167556017 167556019
		Cobalt-60	167556017 1201142453
		Europium-154	1201142454
		Europium-155	167556007
		Silver-108m	167556010
UI	Data rejected due to no valid peak.	Cesium-134	167556013

**Method/Analysis Information**

**Product:** Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived  
**Analytical Method:** EML HASL 300, 4.5.2.3  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 551081  
**Prep Batch Number:** 550554

<b>Sample ID</b>	<b>Client ID</b>
167556021	9106-0015-014F
167556022	9106-0015-016F
167556023	9106-0015-017F
167556024	9106-0015-019F
167556025	9106-0015-020F
167556026	9106-0015-005FS
167556027	9106-0015-012FS
167556028	9106-0015-018FS
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201142459	Method Blank (MB)
1201142460	167556029(9106-0015-021F) Sample Duplicate (DUP)
1201142461	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 11.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 167556029 (9106-0015-021F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

<b>Qualifier</b>	<b>Reason</b>	<b>Analyte</b>	<b>Sample</b>
UI	Data rejected due to high peak width.	Bismuth-212	167556022
		Cobalt-60	167556029
UI	Data rejected due to interference.	Manganese-54	167556024
			167556026
			167556031
UI	Data rejected due to low abundance.	Bismuth-214	167556027
			Cesium-134
		Lead-212	167556026
			167556031
			1201142460
167556023	1201142459		

**Method/Analysis Information**

<b>Product:</b>	<b>GFPC, Sr90, solid-ALL FSS</b>
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	550820
Prep Batch Number:	550564
Dry Soil Prep GL-RAD-A-021 Batch Number:	550552

<b>Sample ID</b>	<b>Client ID</b>
167556001	9106-0015-022F
167556002	9106-0015-023F
167556003	9106-0015-024F
167556004	9106-0015-026F
167556005	9106-0015-027F
167556006	9106-0015-028F
167556007	9106-0015-018F
167556008	9106-0015-025F
167556009	9106-0015-001F
167556010	9106-0015-002F
167556011	9106-0015-003F
167556012	9106-0015-005F
167556013	9106-0015-006F
167556014	9106-0015-007F
167556015	9106-0015-008F
167556016	9106-0015-009F
167556017	9106-0015-010F
167556018	9106-0015-011F
167556019	9106-0015-012F
167556020	9106-0015-013F
1201141746	Method Blank (MB)
1201141747	167556008(9106-0015-025F) Sample Duplicate (DUP)
1201141748	167556008(9106-0015-025F) Matrix Spike (MS)
1201141749	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167556008 (9106-0015-025F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Samples 1201141746 (MB), 1201141747 (9106-0015-025F), 1201141748 (9106-0015-025F), 1201141749 (LCS), 167556001 (9106-0015-022F), 167556002 (9106-0015-023F), 167556003 (9106-0015-024F), 167556004 (9106-0015-026F), 167556005 (9106-0015-027F), 167556006 (9106-0015-028F), 167556007 (9106-0015-018F), 167556008 (9106-0015-025F), 167556009 (9106-0015-001F), 167556010 (9106-0015-002F), 167556011 (9106-0015-003F), 167556012 (9106-0015-005F), 167556013 (9106-0015-006F), 167556014 (9106-0015-007F), 167556015 (9106-0015-008F), 167556016 (9106-0015-009F), 167556017 (9106-0015-010F), 167556018 (9106-0015-011F), 167556019 (9106-0015-012F) and 167556020 (9106-0015-013F) were dried and reweighed due to low matrix spike recovery.



**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** GFPC, Sr90, solid-ALL FSS  
**Analytical Method:** EPA 905.0 Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 550821  
**Prep Batch Number:** 550566  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 550554

<b>Sample ID</b>	<b>Client ID</b>
167556021	9106-0015-014F
167556022	9106-0015-016F
167556023	9106-0015-017F
167556024	9106-0015-019F
167556025	9106-0015-020F
167556026	9106-0015-005FS
167556027	9106-0015-012FS
167556028	9106-0015-018FS
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141750	Method Blank (MB)
1201141751	167554004(9106-0007-021F) Sample Duplicate (DUP)
1201141752	167554004(9106-0007-021F) Matrix Spike (MS)
1201141753	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167554004 (9106-0007-021F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 550849

<b>Sample ID</b>	<b>Client ID</b>
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141843	Method Blank (MB)
1201141844	167556030(9106-0015-004F) Sample Duplicate (DUP)
1201141845	167556030(9106-0015-004F) Matrix Spike (MS)
1201141846	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167556030 (9106-0015-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	550847
Prep Batch Number:	550566
Dry Soil Prep GL-RAD-A-021 Batch Number:	550554

<b>Sample ID</b>	<b>Client ID</b>
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141835	Method Blank (MB)
1201141836	167555017(9106-0013-009F) Sample Duplicate (DUP)
1201141837	167555017(9106-0013-009F) Matrix Spike (MS)
1201141838	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167555017 (9106-0013-009F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Ni63, Solid-ALL FSS

Analytical Method: DOE RESL Ni-1, Modified

Prep Method: Ash Soil Prep

Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep

Analytical Batch Number: 556697

Prep Batch Number: 550566

Dry Soil Prep GL-RAD-A-021 Batch Number: 550554

Sample ID	Client ID
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201155543	Method Blank (MB)
1201155544	167555017(9106-0013-009F) Sample Duplicate (DUP)
1201155545	167555017(9106-0013-009F) Matrix Spike (MS)
1201155546	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167555017 (9106-0013-009F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples were reprepared due to low/high recovery.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS  
**Analytical Method:** EPA 906.0 Modified  
**Analytical Batch Number:** 550850

<b>Sample ID</b>	<b>Client ID</b>
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141847	Method Blank (MB)
1201141848	167556031(9106-0015-015F) Sample Duplicate (DUP)
1201141849	167556031(9106-0015-015F) Matrix Spike (MS)
1201141850	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 12.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 167556031 (9106-0015-015F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**



**Product:** Liquid Scint C14, Solid All,FSS  
**Analytical Method:** EPA EERF C-01 Modified  
**Analytical Batch Number:** 550851

<b>Sample ID</b>	<b>Client ID</b>
167556029	9106-0015-021F
167556030	9106-0015-004F
167556031	9106-0015-015F
1201141851	Method Blank (MB)
1201141852	167556029(9106-0015-021F) Sample Duplicate (DUP)
1201141853	167556029(9106-0015-021F) Matrix Spike (MS)
1201141854	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 167556029 (9106-0015-021F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Preparation Information**



# **SAMPLE DATA SUMMARY**

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-1037 GEL Work Order: 167556

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by



# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID:	9106 0015 022F	Project:	YANK01204
Sample ID:	167556001	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	27 JUN 06		
Receive Date:	21 JUL 06		
Collector:	Client		
Moisture:	39.1%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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**Rad Gamma Spec Analysis**

*Gamma, Solid FSS GAM & ALL FSS 226 Ingrowth  
Waived*

Actinium 228		0.799	+/- 0.156	0.0607	+/- 0.156	0.128	pCi/g		MJH1	08/02/06	2157	551078	1
Americium 241	U	0.0246	+/- 0.104	0.0853	+/- 0.104	0.176	pCi/g						
Bismuth 212		0.457	+/- 0.238	0.126	+/- 0.238	0.266	pCi/g						
Bismuth 214		0.612	+/- 0.0886	0.030	+/- 0.0886	0.0628	pCi/g						
Cesium 134	U	0.0453	+/- 0.0355	0.0231	+/- 0.0355	0.0482	pCi/g						
Cesium 137		0.346	+/- 0.0445	0.0178	+/- 0.0445	0.0372	pCi/g						
Cobalt 60		0.697	+/- 0.0732	0.0191	+/- 0.0732	0.0409	pCi/g						
Europium 152	U	0.0354	+/- 0.0503	0.0423	+/- 0.0503	0.0878	pCi/g						
Europium 154	U	0.00728	+/- 0.0592	0.0487	+/- 0.0592	0.105	pCi/g						
Europium 155	U	0.0128	+/- 0.0649	0.0455	+/- 0.0649	0.0935	pCi/g						
Lead 212		0.742	+/- 0.0572	0.0235	+/- 0.0572	0.0486	pCi/g						
Lead 214		0.625	+/- 0.0879	0.0296	+/- 0.0879	0.0615	pCi/g						
Manganese 54	U	0.022	+/- 0.0235	0.017	+/- 0.0235	0.0358	pCi/g						
Niobium 94	U	0.00715	+/- 0.0183	0.0156	+/- 0.0183	0.0326	pCi/g						
Potassium 40		12.5	+/- 0.783	0.138	+/- 0.783	0.302	pCi/g						
Radium 226		0.612	+/- 0.0886	0.030	+/- 0.0886	0.0628	pCi/g						
Silver 108m	U	0.00466	+/- 0.0164	0.0143	+/- 0.0164	0.0298	pCi/g						
Thallium 208		0.219	+/- 0.0428	0.0167	+/- 0.0428	0.0349	pCi/g						

**Rad Gas Flow Proportional Counting**

*GFPC, Sr90, solid ALL FSS*

Strontium 90	U	0.00253	+/- 0.0182	0.0196	+/- 0.0182	0.0421	pCi/g		BXF1	07/28/06	2004	550820	2
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**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 022F  
Sample ID: 167556001

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			73		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 023F  
Sample ID: 167556002  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 50.3%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.918	+/- 0.311	0.111	+/- 0.311	0.236	pCi/g		MJH1	08/02/06	2157	551078	1
Americium 241		0.132	+/- 0.0628	0.031	+/- 0.0628	0.0639	pCi/g						
Bismuth 212		0.708	+/- 0.479	0.232	+/- 0.479	0.493	pCi/g						
Bismuth 214		0.655	+/- 0.150	0.0538	+/- 0.150	0.114	pCi/g						
Cesium 134	U	0.0612	+/- 0.0474	0.0391	+/- 0.0474	0.0825	pCi/g						
Cesium 137		0.328	+/- 0.0695	0.0278	+/- 0.0695	0.0592	pCi/g						
Cobalt 60		1.06	+/- 0.130	0.0345	+/- 0.130	0.0748	pCi/g						
Europium 152	U	0.0443	+/- 0.0817	0.070	+/- 0.0817	0.146	pCi/g						
Europium 154	U	0.0323	+/- 0.108	0.0858	+/- 0.108	0.187	pCi/g						
Europium 155	UI	0.00	+/- 0.100	0.0533	+/- 0.100	0.110	pCi/g						
Lead 212		0.890	+/- 0.134	0.0377	+/- 0.134	0.0783	pCi/g						
Lead 214		0.652	+/- 0.128	0.0484	+/- 0.128	0.101	pCi/g						
Manganese 54	U	0.0531	+/- 0.0448	0.0363	+/- 0.0448	0.0767	pCi/g						
Niobium 94	U	0.018	+/- 0.0337	0.0259	+/- 0.0337	0.055	pCi/g						
Potassium 40		13.5	+/- 1.43	0.242	+/- 1.43	0.541	pCi/g						
Radium 226		0.655	+/- 0.150	0.0538	+/- 0.150	0.114	pCi/g						
Silver 108m	U	0.00144	+/- 0.0278	0.023	+/- 0.0278	0.0486	pCi/g						
Thallium 208		0.264	+/- 0.0861	0.0297	+/- 0.0861	0.0628	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.012	+/- 0.0132	0.0172	+/- 0.0132	0.0381	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 023F  
Sample ID: 167556002

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			74		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 024F  
Sample ID: 167556003  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 45.7%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		1.06	+/- 0.175	0.0574	+/- 0.175	0.120	pCi/g		MJH1	08/02/06	2158	551078	1
Americium 241	U	0.0554	+/- 0.084	0.0647	+/- 0.084	0.132	pCi/g						
Bismuth 212		0.705	+/- 0.250	0.131	+/- 0.250	0.272	pCi/g						
Bismuth 214		0.793	+/- 0.103	0.0302	+/- 0.103	0.0625	pCi/g						
Cesium 134	UI	0.00	+/- 0.0438	0.0223	+/- 0.0438	0.0461	pCi/g						
Cesium 137		0.0671	+/- 0.0327	0.0165	+/- 0.0327	0.0343	pCi/g						
Cobalt 60		0.115	+/- 0.033	0.0194	+/- 0.033	0.0408	pCi/g						
Europium 152	U	0.0101	+/- 0.0582	0.0458	+/- 0.0582	0.0939	pCi/g						
Europium 154	U	0.00943	+/- 0.0646	0.0545	+/- 0.0646	0.114	pCi/g						
Europium 155	UI	0.00	+/- 0.0595	0.0419	+/- 0.0595	0.0853	pCi/g						
Lead 212		1.16	+/- 0.0754	0.0248	+/- 0.0754	0.0506	pCi/g						
Lead 214		0.903	+/- 0.093	0.0319	+/- 0.093	0.0654	pCi/g						
Manganese 54	UI	0.00	+/- 0.0334	0.0169	+/- 0.0334	0.0352	pCi/g						
Niobium 94	U	0.00695	+/- 0.0185	0.0149	+/- 0.0185	0.031	pCi/g						
Potassium 40		17.0	+/- 0.888	0.157	+/- 0.888	0.335	pCi/g						
Radium 226		0.793	+/- 0.103	0.0302	+/- 0.103	0.0625	pCi/g						
Silver 108m	U	7.690E 05	+/- 0.0192	0.015	+/- 0.0192	0.0309	pCi/g						
Thallium 208		0.358	+/- 0.0516	0.0168	+/- 0.0516	0.0348	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0252	+/- 0.0167	0.0139	+/- 0.0167	0.0312	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 024F  
Sample ID: 167556003

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			77		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 026F  
Sample ID: 167556004  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 36.3%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.690	+/- 0.174	0.0631	+/- 0.174	0.136	pCi/g		MJH1	08/02/06	2159	551078	1
Americium 241	U	0.0332	+/- 0.091	0.0732	+/- 0.091	0.151	pCi/g						
Bismuth 212		0.692	+/- 0.285	0.134	+/- 0.285	0.286	pCi/g						
Bismuth 214		0.655	+/- 0.0893	0.0307	+/- 0.0893	0.0652	pCi/g						
Cesium 134	U	0.0397	+/- 0.0294	0.023	+/- 0.0294	0.0487	pCi/g						
Cesium 137		0.323	+/- 0.0534	0.0189	+/- 0.0534	0.040	pCi/g						
Cobalt 60		0.0575	+/- 0.0355	0.0178	+/- 0.0355	0.0392	pCi/g						
Europium 152	U	0.00373	+/- 0.0526	0.0453	+/- 0.0526	0.0949	pCi/g						
Europium 154	U	0.0133	+/- 0.0654	0.0531	+/- 0.0654	0.116	pCi/g						
Europium 155	U	0.0257	+/- 0.0565	0.0493	+/- 0.0565	0.102	pCi/g						
Lead 212		0.752	+/- 0.0638	0.0275	+/- 0.0638	0.0569	pCi/g						
Lead 214		0.576	+/- 0.0913	0.0335	+/- 0.0913	0.070	pCi/g						
Manganese 54	U	0.0123	+/- 0.0224	0.0185	+/- 0.0224	0.0395	pCi/g						
Niobium 94	U	0.00994	+/- 0.0204	0.0174	+/- 0.0204	0.0368	pCi/g						
Potassium 40		11.6	+/- 0.899	0.162	+/- 0.899	0.360	pCi/g						
Radium 226		0.655	+/- 0.0893	0.0307	+/- 0.0893	0.0652	pCi/g						
Silver 108m	U	0.00308	+/- 0.0185	0.0159	+/- 0.0185	0.0335	pCi/g						
Thallium 208		0.252	+/- 0.0476	0.0171	+/- 0.0476	0.0364	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00651	+/- 0.0133	0.0135	+/- 0.0133	0.0304	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 026F  
Sample ID: 167556004

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			77		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 027F  
Sample ID: 167556005  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 31.6%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.597	+/- 0.226	0.0755	+/- 0.226	0.162	pCi/g		MJH1	08/02/06	2159	551078	1
Americium 241	U	0.0217	+/- 0.0333	0.0295	+/- 0.0333	0.0607	pCi/g						
Bismuth 212		0.505	+/- 0.284	0.167	+/- 0.284	0.356	pCi/g						
Bismuth 214		0.550	+/- 0.102	0.0374	+/- 0.102	0.0795	pCi/g						
Cesium 134	U	0.00267	+/- 0.0397	0.0285	+/- 0.0397	0.0603	pCi/g						
Cesium 137		0.273	+/- 0.0624	0.0235	+/- 0.0624	0.0498	pCi/g						
Cobalt 60		0.139	+/- 0.0451	0.0288	+/- 0.0451	0.0621	pCi/g						
Europium 152	U	0.0331	+/- 0.0566	0.0484	+/- 0.0566	0.102	pCi/g						
Europium 154	U	0.0308	+/- 0.0866	0.0704	+/- 0.0866	0.153	pCi/g						
Europium 155	U	0.00801	+/- 0.0513	0.0449	+/- 0.0513	0.0928	pCi/g						
Lead 212		0.645	+/- 0.0718	0.0324	+/- 0.0718	0.067	pCi/g						
Lead 214		0.522	+/- 0.0805	0.0343	+/- 0.0805	0.072	pCi/g						
Manganese 54	U	0.0262	+/- 0.0297	0.0227	+/- 0.0297	0.0485	pCi/g						
Niobium 94	U	0.0158	+/- 0.0251	0.022	+/- 0.0251	0.0465	pCi/g						
Potassium 40		10.4	+/- 0.947	0.198	+/- 0.947	0.440	pCi/g						
Radium 226		0.550	+/- 0.102	0.0374	+/- 0.102	0.0795	pCi/g						
Silver 108m	U	0.00333	+/- 0.0212	0.0186	+/- 0.0212	0.0392	pCi/g						
Thallium 208		0.253	+/- 0.0576	0.0206	+/- 0.0576	0.0438	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00314	+/- 0.0156	0.0168	+/- 0.0156	0.0378	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 027F  
Sample ID: 167556005

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			62		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 028F  
Sample ID: 167556006  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 24.7%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.367	+/- 0.103	0.0378	+/- 0.103	0.081	pCi/g		MJH1	08/02/06	2159	551078	1
Americium 241	U	0.0354	+/- 0.0729	0.0606	+/- 0.0729	0.126	pCi/g						
Bismuth 212		0.352	+/- 0.173	0.0996	+/- 0.173	0.210	pCi/g						
Bismuth 214		0.202	+/- 0.0692	0.0216	+/- 0.0692	0.0455	pCi/g						
Cesium 134	U	0.0147	+/- 0.0192	0.0135	+/- 0.0192	0.0286	pCi/g						
Cesium 137	U	0.0049	+/- 0.0152	0.013	+/- 0.0152	0.0273	pCi/g						
Cobalt 60	U	0.00379	+/- 0.0141	0.0112	+/- 0.0141	0.0245	pCi/g						
Europium 152	U	0.0128	+/- 0.033	0.0287	+/- 0.033	0.0604	pCi/g						
Europium 154	U	0.0203	+/- 0.0397	0.0346	+/- 0.0397	0.0748	pCi/g						
Europium 155	U	0.052	+/- 0.0407	0.039	+/- 0.0407	0.0806	pCi/g						
Lead 212		0.444	+/- 0.0425	0.0197	+/- 0.0425	0.0408	pCi/g						
Lead 214		0.295	+/- 0.0608	0.0201	+/- 0.0608	0.0424	pCi/g						
Manganese 54	U	0.00289	+/- 0.0136	0.0119	+/- 0.0136	0.0253	pCi/g						
Niobium 94	U	0.00973	+/- 0.013	0.0114	+/- 0.013	0.0239	pCi/g						
Potassium 40		5.18	+/- 0.461	0.0737	+/- 0.461	0.168	pCi/g						
Radium 226		0.202	+/- 0.0692	0.0216	+/- 0.0692	0.0455	pCi/g						
Silver 108m	U	0.00217	+/- 0.0111	0.00985	+/- 0.0111	0.0208	pCi/g						
Thallium 208		0.101	+/- 0.0274	0.012	+/- 0.0274	0.0253	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0153	+/- 0.016	0.0213	+/- 0.016	0.0472	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 028F  
Sample ID: 167556006

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			58		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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 2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 018F  
 Sample ID: 167556007  
 Matrix: SE  
 Collect Date: 27 JUN 06  
 Receive Date: 21 JUL 06  
 Collector: Client  
 Moisture: 30.5%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.704	+/- 0.174	0.0798	+/- 0.174	0.167	pCi/g		MJH1	08/02/06	2200	551078	1
Americium 241	U	0.0293	+/- 0.0449	0.040	+/- 0.0449	0.0822	pCi/g						
Bismuth 212		0.681	+/- 0.263	0.152	+/- 0.263	0.319	pCi/g						
Bismuth 214		0.517	+/- 0.0941	0.0319	+/- 0.0941	0.0669	pCi/g						
Cesium 134	U	0.0448	+/- 0.047	0.0235	+/- 0.047	0.0492	pCi/g						
Cesium 137		0.354	+/- 0.0551	0.0169	+/- 0.0551	0.0355	pCi/g						
Cobalt 60		1.16	+/- 0.100	0.0146	+/- 0.100	0.032	pCi/g						
Europium 152	U	0.019	+/- 0.0509	0.0446	+/- 0.0509	0.0926	pCi/g						
Europium 154	U	0.0126	+/- 0.0546	0.046	+/- 0.0546	0.0996	pCi/g						
Europium 155	UI	0.00	+/- 0.0634	0.0432	+/- 0.0634	0.0888	pCi/g						
Lead 212		0.690	+/- 0.0918	0.0309	+/- 0.0918	0.0634	pCi/g						
Lead 214		0.601	+/- 0.0993	0.0288	+/- 0.0993	0.0601	pCi/g						
Manganese 54	U	0.020	+/- 0.0201	0.0185	+/- 0.0201	0.039	pCi/g						
Niobium 94	U	0.0139	+/- 0.0187	0.0169	+/- 0.0187	0.0354	pCi/g						
Potassium 40		12.7	+/- 1.09	0.127	+/- 1.09	0.283	pCi/g						
Radium 226		0.517	+/- 0.0941	0.0319	+/- 0.0941	0.0669	pCi/g						
Silver 108m	U	0.0183	+/- 0.0182	0.0162	+/- 0.0182	0.0337	pCi/g						
Thallium 208		0.243	+/- 0.0458	0.016	+/- 0.0458	0.0337	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0115	+/- 0.0136	0.018	+/- 0.0136	0.0403	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 018F  
Sample ID: 167556007

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			60		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 025F  
Sample ID: 167556008  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 45.6%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.922	+/- 0.242	0.087	+/- 0.242	0.174	pCi/g		MJH1	08/02/06	2213	551078	1
Americium 241	U	0.0512	+/- 0.0952	0.0694	+/- 0.0952	0.139	pCi/g						
Bismuth 212		0.551	+/- 0.420	0.179	+/- 0.420	0.357	pCi/g						
Bismuth 214		0.755	+/- 0.149	0.0416	+/- 0.149	0.0831	pCi/g						
Cesium 134	U	0.0485	+/- 0.058	0.0288	+/- 0.058	0.0576	pCi/g						
Cesium 137	U	0.0117	+/- 0.0299	0.0248	+/- 0.0299	0.0495	pCi/g						
Cobalt 60	U	0.00363	+/- 0.0334	0.027	+/- 0.0334	0.0539	pCi/g						
Europium 152	U	0.0385	+/- 0.0988	0.0582	+/- 0.0988	0.116	pCi/g						
Europium 154	U	0.0447	+/- 0.0909	0.0705	+/- 0.0909	0.141	pCi/g						
Europium 155	U	0.0768	+/- 0.0905	0.062	+/- 0.0905	0.124	pCi/g						
Lead 212		1.12	+/- 0.120	0.0344	+/- 0.120	0.0688	pCi/g						
Lead 214		0.929	+/- 0.136	0.0408	+/- 0.136	0.0816	pCi/g						
Manganese 54	U	0.0174	+/- 0.0295	0.0235	+/- 0.0295	0.047	pCi/g						
Niobium 94	U	0.0143	+/- 0.0259	0.0226	+/- 0.0259	0.0451	pCi/g						
Potassium 40		17.2	+/- 1.53	0.199	+/- 1.53	0.397	pCi/g						
Radium 226		0.755	+/- 0.149	0.0416	+/- 0.149	0.0831	pCi/g						
Silver 108m	U	0.00906	+/- 0.024	0.0192	+/- 0.024	0.0384	pCi/g						
Thallium 208		0.308	+/- 0.0692	0.023	+/- 0.0692	0.0459	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr-90, solid ALL FSS</i>													
Strontium 90	U	0.0128	+/- 0.0169	0.0164	+/- 0.0169	0.0368	pCi/g		BXF1	07/31/06	1029	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 025F  
Sample ID: 167556008

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			66		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 001F  
Sample ID: 167556009  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 15.2%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.592	+/- 0.136	0.0625	+/- 0.136	0.125	pCi/g		MJH1	08/02/06	2213	551078	1
Americium 241	U	0.00472	+/- 0.0757	0.0598	+/- 0.0757	0.120	pCi/g						
Bismuth 212		0.646	+/- 0.242	0.112	+/- 0.242	0.223	pCi/g						
Bismuth 214		0.464	+/- 0.0832	0.0304	+/- 0.0832	0.0607	pCi/g						
Cesium 134	U	0.0344	+/- 0.0232	0.0212	+/- 0.0232	0.0425	pCi/g						
Cesium 137	U	0.0256	+/- 0.020	0.0182	+/- 0.020	0.0365	pCi/g						
Cobalt 60	U	0.012	+/- 0.019	0.0171	+/- 0.019	0.0341	pCi/g						
Europium 152	U	0.00443	+/- 0.0637	0.0423	+/- 0.0637	0.0846	pCi/g						
Europium 154	U	0.0276	+/- 0.0606	0.0489	+/- 0.0606	0.0977	pCi/g						
Europium 155	U	0.057	+/- 0.0546	0.0464	+/- 0.0546	0.0928	pCi/g						
Lead 212		0.634	+/- 0.074	0.0235	+/- 0.074	0.047	pCi/g						
Lead 214		0.550	+/- 0.0878	0.0295	+/- 0.0878	0.0589	pCi/g						
Manganese 54	U	0.0143	+/- 0.0195	0.0156	+/- 0.0195	0.0311	pCi/g						
Niobium 94	U	0.00316	+/- 0.021	0.0154	+/- 0.021	0.0308	pCi/g						
Potassium 40		11.8	+/- 1.02	0.116	+/- 1.02	0.231	pCi/g						
Radium 226		0.464	+/- 0.0832	0.0304	+/- 0.0832	0.0607	pCi/g						
Silver 108m	U	0.00452	+/- 0.0168	0.0144	+/- 0.0168	0.0287	pCi/g						
Thallium 208		0.221	+/- 0.0445	0.0159	+/- 0.0445	0.0317	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0248	+/- 0.0208	0.0185	+/- 0.0208	0.0416	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 001F  
 Sample ID: 167556009

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			55		(25% 125%)					

Notes:

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  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 002F  
Sample ID: 167556010  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 38.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.867	+/- 0.261	0.108	+/- 0.261	0.217	pCi/g		MJH1	08/02/06	2214	551078	1
Americium 241	U	0.0351	+/- 0.0435	0.0289	+/- 0.0435	0.0578	pCi/g						
Bismuth 212		0.817	+/- 0.454	0.213	+/- 0.454	0.426	pCi/g						
Bismuth 214		0.602	+/- 0.128	0.0455	+/- 0.128	0.0909	pCi/g						
Cesium 134	U	0.0334	+/- 0.0399	0.0358	+/- 0.0399	0.0716	pCi/g						
Cesium 137		0.522	+/- 0.0825	0.0274	+/- 0.0825	0.0548	pCi/g						
Cobalt 60		1.11	+/- 0.109	0.0296	+/- 0.109	0.0593	pCi/g						
Europium 152	U	0.05	+/- 0.0956	0.0591	+/- 0.0956	0.118	pCi/g						
Europium 154	U	0.00342	+/- 0.0997	0.0824	+/- 0.0997	0.165	pCi/g						
Europium 155	UI	0.00	+/- 0.0735	0.0479	+/- 0.0735	0.0958	pCi/g						
Lead 212		0.828	+/- 0.0995	0.0315	+/- 0.0995	0.063	pCi/g						
Lead 214		0.611	+/- 0.118	0.0421	+/- 0.118	0.0842	pCi/g						
Manganese 54	U	0.00239	+/- 0.0385	0.0327	+/- 0.0385	0.0654	pCi/g						
Niobium 94	U	0.0158	+/- 0.0294	0.0261	+/- 0.0294	0.0522	pCi/g						
Potassium 40		13.2	+/- 1.09	0.246	+/- 1.09	0.492	pCi/g						
Radium 226		0.602	+/- 0.128	0.0455	+/- 0.128	0.0909	pCi/g						
Silver 108m	UI	0.00	+/- 0.0604	0.0211	+/- 0.0604	0.0421	pCi/g						
Thallium 208		0.248	+/- 0.0665	0.025	+/- 0.0665	0.050	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0188	+/- 0.00973	0.0159	+/- 0.00974	0.0359	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 002F  
Sample ID: 167556010

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			66		(25% 125%)						

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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## Certificate of Analysis

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East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID:	9106 0015 003F	Project:	YANK01204
Sample ID:	167556011	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	28 JUN 06		
Receive Date:	21 JUL 06		
Collector:	Client		
Moisture:	51.9%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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**Rad Gamma Spec Analysis**

*Gamma, Solid FSS GAM & ALL FSS 226 Ingrowth  
Waived*

Actinium 228		0.957	+/- 0.187	0.0691	+/- 0.187	0.146	pCi/g						
Americium 241	U	0.019	+/- 0.124	0.0838	+/- 0.124	0.172	pCi/g						
Bismuth 212		0.724	+/- 0.331	0.144	+/- 0.331	0.302	pCi/g						
Bismuth 214		0.712	+/- 0.114	0.0344	+/- 0.114	0.0718	pCi/g						
Cesium 134	U	0.0123	+/- 0.0552	0.0238	+/- 0.0552	0.0499	pCi/g						
Cesium 137		0.0467	+/- 0.0304	0.0208	+/- 0.0304	0.0434	pCi/g						
Cobalt 60		0.142	+/- 0.0629	0.0219	+/- 0.0629	0.0468	pCi/g						
Europium 152	U	0.00241	+/- 0.061	0.0472	+/- 0.061	0.0979	pCi/g						
Europium 154	U	0.0408	+/- 0.0795	0.0675	+/- 0.0795	0.143	pCi/g						
Europium 155	U	0.0416	+/- 0.0637	0.0521	+/- 0.0637	0.107	pCi/g						
Lead 212		0.998	+/- 0.076	0.0268	+/- 0.076	0.0553	pCi/g						
Lead 214		0.706	+/- 0.0995	0.0358	+/- 0.0995	0.0741	pCi/g						
Manganese 54	U	0.0141	+/- 0.0255	0.021	+/- 0.0255	0.044	pCi/g						
Niobium 94	U	0.00372	+/- 0.0263	0.0183	+/- 0.0263	0.0382	pCi/g						
Potassium 40		15.0	+/- 0.976	0.184	+/- 0.976	0.398	pCi/g						
Radium 226		0.712	+/- 0.114	0.0344	+/- 0.114	0.0718	pCi/g						
Silver 108m	U	0.00288	+/- 0.019	0.0155	+/- 0.019	0.0324	pCi/g						
Thallium 208		0.282	+/- 0.0552	0.0177	+/- 0.0552	0.0371	pCi/g						

**Rad Gas Flow Proportional Counting**

*GFPC, Sr90, solid ALL FSS*

Strontium 90	U	0.00333	+/- 0.0138	0.0162	+/- 0.0138	0.0368	pCi/g						
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**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 003F  
Sample ID: 167556011

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			62		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
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  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 005F  
Sample ID: 167556012  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 43.7%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.944	+/- 0.231	0.0665	+/- 0.231	0.143	pCi/g		MJH1	08/02/06	2320	551078	1
Americium 241	U	0.0774	+/- 0.104	0.0786	+/- 0.104	0.162	pCi/g						
Bismuth 212		0.426	+/- 0.330	0.165	+/- 0.330	0.350	pCi/g						
Bismuth 214		0.548	+/- 0.0998	0.0431	+/- 0.0998	0.0904	pCi/g						
Cesium 134	U	0.0306	+/- 0.0418	0.0272	+/- 0.0418	0.0574	pCi/g						
Cesium 137		0.0589	+/- 0.0336	0.0198	+/- 0.0336	0.042	pCi/g						
Cobalt 60	U	0.000929	+/- 0.0279	0.0233	+/- 0.0279	0.0507	pCi/g						
Europium 152	U	0.0167	+/- 0.0582	0.0482	+/- 0.0582	0.101	pCi/g						
Europium 154	U	0.022	+/- 0.0786	0.0638	+/- 0.0786	0.139	pCi/g						
Europium 155	U	0.0444	+/- 0.0641	0.052	+/- 0.0641	0.108	pCi/g						
Lead 212		0.811	+/- 0.101	0.0367	+/- 0.101	0.0756	pCi/g						
Lead 214		0.711	+/- 0.0995	0.0368	+/- 0.0995	0.077	pCi/g						
Manganese 54	U	0.00375	+/- 0.0264	0.0217	+/- 0.0264	0.0462	pCi/g						
Niobium 94	U	0.0166	+/- 0.0243	0.0197	+/- 0.0243	0.0417	pCi/g						
Potassium 40		14.2	+/- 1.04	0.177	+/- 1.04	0.396	pCi/g						
Radium 226		0.548	+/- 0.0998	0.0431	+/- 0.0998	0.0904	pCi/g						
Silver 108m	U	0.00534	+/- 0.020	0.0169	+/- 0.020	0.0356	pCi/g						
Thallium 208		0.301	+/- 0.0503	0.0203	+/- 0.0503	0.0429	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0133	+/- 0.018	0.0173	+/- 0.018	0.0391	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 005F  
Sample ID: 167556012

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			60		(25% 125%)						

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 006F  
Sample ID: 167556013  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 31%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.630	+/- 0.158	0.0716	+/- 0.158	0.153	pCi/g		MJH1	08/02/06	2320	551078	1
Americium 241	U	0.0436	+/- 0.148	0.0812	+/- 0.148	0.167	pCi/g						
Bismuth 212		0.700	+/- 0.269	0.159	+/- 0.269	0.337	pCi/g						
Bismuth 214		0.530	+/- 0.091	0.0365	+/- 0.091	0.0771	pCi/g						
Cesium 134	UI	0.00	+/- 0.0371	0.0225	+/- 0.0371	0.048	pCi/g						
Cesium 137		0.322	+/- 0.0592	0.0193	+/- 0.0592	0.0409	pCi/g						
Cobalt 60		0.350	+/- 0.063	0.0198	+/- 0.063	0.0434	pCi/g						
Europium 152	U	0.0139	+/- 0.0652	0.0545	+/- 0.0652	0.114	pCi/g						
Europium 154	U	0.0671	+/- 0.0782	0.058	+/- 0.0782	0.126	pCi/g						
Europium 155	U	0.0798	+/- 0.0796	0.0573	+/- 0.0796	0.118	pCi/g						
Lead 212		0.728	+/- 0.0655	0.0307	+/- 0.0655	0.0636	pCi/g						
Lead 214		0.578	+/- 0.0742	0.0402	+/- 0.0742	0.0837	pCi/g						
Manganese 54	U	0.0161	+/- 0.031	0.0213	+/- 0.031	0.0452	pCi/g						
Niobium 94	U	0.00415	+/- 0.021	0.0175	+/- 0.021	0.0371	pCi/g						
Potassium 40		12.4	+/- 0.882	0.157	+/- 0.882	0.353	pCi/g						
Radium 226		0.530	+/- 0.091	0.0365	+/- 0.091	0.0771	pCi/g						
Silver 108m	U	0.00876	+/- 0.0226	0.018	+/- 0.0226	0.0377	pCi/g						
Thallium 208		0.236	+/- 0.0559	0.0184	+/- 0.0559	0.0391	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr-90, solid ALL FSS</i>													
Strontium 90	U	0.00864	+/- 0.020	0.0207	+/- 0.020	0.0462	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 006F  
Sample ID: 167556013

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			54		(25% 125%)						

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 007F  
Sample ID: 167556014  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 36.2%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.677	+/- 0.304	0.109	+/- 0.304	0.230	pCi/g		MJH1	08/02/06	2321	551078	1
Americium 241	U	0.00383	+/- 0.0411	0.0335	+/- 0.0411	0.0689	pCi/g						
Bismuth 212		0.485	+/- 0.523	0.218	+/- 0.523	0.459	pCi/g						
Bismuth 214		0.546	+/- 0.127	0.0561	+/- 0.127	0.117	pCi/g						
Cesium 134	U	0.0351	+/- 0.0412	0.0355	+/- 0.0412	0.0746	pCi/g						
Cesium 137		0.285	+/- 0.0741	0.0253	+/- 0.0741	0.0535	pCi/g						
Cobalt 60		0.355	+/- 0.0793	0.0294	+/- 0.0793	0.0634	pCi/g						
Europium 152	U	0.0141	+/- 0.082	0.0661	+/- 0.082	0.138	pCi/g						
Europium 154	U	0.0392	+/- 0.106	0.0846	+/- 0.106	0.182	pCi/g						
Europium 155	U	0.0388	+/- 0.0957	0.0571	+/- 0.0957	0.118	pCi/g						
Lead 212		0.653	+/- 0.0873	0.0421	+/- 0.0873	0.0867	pCi/g						
Lead 214		0.650	+/- 0.128	0.0461	+/- 0.128	0.0961	pCi/g						
Manganese 54	U	0.0107	+/- 0.0383	0.0317	+/- 0.0383	0.0667	pCi/g						
Niobium 94	U	0.00394	+/- 0.0314	0.0261	+/- 0.0314	0.0548	pCi/g						
Potassium 40		12.4	+/- 1.25	0.228	+/- 1.25	0.501	pCi/g						
Radium 226		0.546	+/- 0.127	0.0561	+/- 0.127	0.117	pCi/g						
Silver 108m	U	0.00244	+/- 0.0267	0.023	+/- 0.0267	0.0481	pCi/g						
Thallium 208		0.229	+/- 0.0738	0.027	+/- 0.0738	0.0567	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00298	+/- 0.0178	0.0193	+/- 0.0178	0.0437	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 007F  
Sample ID: 167556014

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			50		(25% 125%)						

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 008F  
Sample ID: 167556015  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 51.1%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.605	+/- 0.173	0.048	+/- 0.173	0.101	pCi/g		MJH1	08/02/06	2321	551078	1
Americium 241	U	0.0586	+/- 0.115	0.0867	+/- 0.115	0.178	pCi/g						
Bismuth 212		0.410	+/- 0.217	0.100	+/- 0.217	0.211	pCi/g						
Bismuth 214		0.542	+/- 0.0813	0.0245	+/- 0.0813	0.051	pCi/g						
Cesium 134	UI	0.00	+/- 0.0246	0.0164	+/- 0.0246	0.0343	pCi/g						
Cesium 137		0.215	+/- 0.0393	0.0146	+/- 0.0393	0.0303	pCi/g						
Cobalt 60		0.349	+/- 0.0513	0.0129	+/- 0.0513	0.0277	pCi/g						
Europium 152	U	0.00521	+/- 0.0451	0.0359	+/- 0.0451	0.0743	pCi/g						
Europium 154	U	0.00882	+/- 0.054	0.0442	+/- 0.054	0.0937	pCi/g						
Europium 155		0.0782	+/- 0.0643	0.0369	+/- 0.0643	0.0756	pCi/g						
Lead 212		0.742	+/- 0.0872	0.0204	+/- 0.0872	0.0419	pCi/g						
Lead 214		0.612	+/- 0.0914	0.0262	+/- 0.0914	0.0541	pCi/g						
Manganese 54	U	0.0307	+/- 0.0243	0.0153	+/- 0.0243	0.032	pCi/g						
Niobium 94	U	0.00405	+/- 0.016	0.0132	+/- 0.016	0.0276	pCi/g						
Potassium 40		11.8	+/- 1.02	0.125	+/- 1.02	0.270	pCi/g						
Radium 226		0.542	+/- 0.0813	0.0245	+/- 0.0813	0.051	pCi/g						
Silver 108m	U	0.00592	+/- 0.0152	0.013	+/- 0.0152	0.0269	pCi/g						
Thallium 208		0.244	+/- 0.0493	0.0136	+/- 0.0493	0.0284	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0105	+/- 0.0168	0.0163	+/- 0.0168	0.0372	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 008F  
Sample ID: 167556015

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			56		(25% 125%)						

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 009F  
Sample ID: 167556016  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 27.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.768	+/- 0.163	0.0612	+/- 0.163	0.122	pCi/g		MJH1	08/03/06	0645	551078	1
Americium 241	U	0.0144	+/- 0.0646	0.0497	+/- 0.0646	0.0992	pCi/g						
Bismuth 212		0.362	+/- 0.212	0.118	+/- 0.212	0.236	pCi/g						
Bismuth 214		0.517	+/- 0.0964	0.0292	+/- 0.0964	0.0583	pCi/g						
Cesium 134	U	0.0282	+/- 0.0267	0.0205	+/- 0.0267	0.0409	pCi/g						
Cesium 137	U	0.0119	+/- 0.0201	0.0174	+/- 0.0201	0.0348	pCi/g						
Cobalt 60	U	0.0323	+/- 0.0249	0.0194	+/- 0.0249	0.0387	pCi/g						
Europium 152	U	0.00615	+/- 0.061	0.042	+/- 0.061	0.0839	pCi/g						
Europium 154	U	0.0311	+/- 0.0614	0.0486	+/- 0.0614	0.0971	pCi/g						
Europium 155	U	0.0437	+/- 0.0523	0.0465	+/- 0.0523	0.093	pCi/g						
Lead 212		0.730	+/- 0.0781	0.0244	+/- 0.0781	0.0488	pCi/g						
Lead 214		0.591	+/- 0.0853	0.0314	+/- 0.0853	0.0628	pCi/g						
Manganese 54	U	0.0323	+/- 0.0292	0.0172	+/- 0.0292	0.0343	pCi/g						
Niobium 94	U	0.00976	+/- 0.0172	0.0154	+/- 0.0172	0.0308	pCi/g						
Potassium 40		13.3	+/- 1.12	0.119	+/- 1.12	0.239	pCi/g						
Radium 226		0.517	+/- 0.0964	0.0292	+/- 0.0964	0.0583	pCi/g						
Silver 108m	U	0.00821	+/- 0.0166	0.0146	+/- 0.0166	0.0292	pCi/g						
Thallium 208		0.235	+/- 0.0438	0.0154	+/- 0.0438	0.0309	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0155	+/- 0.0187	0.0182	+/- 0.0187	0.0402	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424

Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 009F  
Sample ID: 167556016

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			68		(25% 125%)						

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 010F  
Sample ID: 167556017  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 24.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.886	+/- 0.192	0.0637	+/- 0.192	0.127	pCi/g		MJH1	08/03/06	0646	551078	1
Americium 241	U	0.0804	+/- 0.0885	0.0709	+/- 0.0885	0.142	pCi/g						
Bismuth 212	UI	0.00	+/- 0.213	0.200	+/- 0.213	0.400	pCi/g						
Bismuth 214		0.490	+/- 0.113	0.035	+/- 0.113	0.070	pCi/g						
Cesium 134	UI	0.00	+/- 0.0357	0.0236	+/- 0.0357	0.0472	pCi/g						
Cesium 137		0.253	+/- 0.0477	0.0181	+/- 0.0477	0.0362	pCi/g						
Cobalt 60	UI	0.00	+/- 0.0301	0.0277	+/- 0.0301	0.0554	pCi/g						
Europium 152	U	0.00295	+/- 0.0908	0.0461	+/- 0.0908	0.0921	pCi/g						
Europium 154	U	0.0233	+/- 0.066	0.0572	+/- 0.066	0.114	pCi/g						
Europium 155	U	0.0607	+/- 0.0751	0.0475	+/- 0.0751	0.095	pCi/g						
Lead 212		0.830	+/- 0.0917	0.0274	+/- 0.0917	0.0548	pCi/g						
Lead 214		0.743	+/- 0.110	0.0343	+/- 0.110	0.0685	pCi/g						
Manganese 54	U	0.014	+/- 0.0226	0.0181	+/- 0.0226	0.0362	pCi/g						
Niobium 94	U	0.00115	+/- 0.0214	0.0179	+/- 0.0214	0.0357	pCi/g						
Potassium 40		13.4	+/- 1.20	0.178	+/- 1.20	0.355	pCi/g						
Radium 226		0.490	+/- 0.113	0.035	+/- 0.113	0.070	pCi/g						
Silver 108m	U	0.00373	+/- 0.018	0.0152	+/- 0.018	0.0304	pCi/g						
Thallium 208		0.279	+/- 0.0557	0.0166	+/- 0.0557	0.0332	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00371	+/- 0.014	0.0149	+/- 0.014	0.0335	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 010F  
Sample ID: 167556017

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			72		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 011F  
Sample ID: 167556018  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 26.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.811	+/- 0.213	0.0921	+/- 0.213	0.184	pCi/g		MJH1	08/03/06	0646	551078	1
Americium 241	U	0.0265	+/- 0.0368	0.0293	+/- 0.0368	0.0586	pCi/g						
Bismuth 212		0.541	+/- 0.298	0.165	+/- 0.298	0.330	pCi/g						
Bismuth 214		0.569	+/- 0.124	0.0405	+/- 0.124	0.0809	pCi/g						
Cesium 134	U	0.0423	+/- 0.0528	0.0283	+/- 0.0528	0.0566	pCi/g						
Cesium 137		0.493	+/- 0.0759	0.0257	+/- 0.0759	0.0513	pCi/g						
Cobalt 60		0.396	+/- 0.0728	0.0235	+/- 0.0728	0.047	pCi/g						
Europium 152	U	0.054	+/- 0.0716	0.0536	+/- 0.0716	0.107	pCi/g						
Europium 154	U	0.00904	+/- 0.0929	0.0781	+/- 0.0929	0.156	pCi/g						
Europium 155	U	0.0563	+/- 0.0579	0.0453	+/- 0.0579	0.0905	pCi/g						
Lead 212		0.721	+/- 0.086	0.0286	+/- 0.086	0.0571	pCi/g						
Lead 214		0.553	+/- 0.104	0.0404	+/- 0.104	0.0807	pCi/g						
Manganese 54	U	0.0238	+/- 0.0237	0.0246	+/- 0.0237	0.0492	pCi/g						
Niobium 94	U	0.00116	+/- 0.0261	0.0196	+/- 0.0261	0.0392	pCi/g						
Potassium 40		11.2	+/- 0.982	0.201	+/- 0.982	0.402	pCi/g						
Radium 226		0.569	+/- 0.124	0.0405	+/- 0.124	0.0809	pCi/g						
Silver 108m	U	0.0109	+/- 0.0233	0.0194	+/- 0.0233	0.0387	pCi/g						
Thallium 208		0.222	+/- 0.0573	0.0235	+/- 0.0573	0.047	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0188	+/- 0.0204	0.019	+/- 0.0204	0.0428	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 011F  
Sample ID: 167556018

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			55		(25% 125%)						

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 012F  
Sample ID: 167556019  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 37.4%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.545	+/- 0.190	0.073	+/- 0.190	0.155	pCi/g		MJH1	08/03/06	0749	551078	1
Americium 241	U	0.000712	+/- 0.135	0.0767	+/- 0.135	0.158	pCi/g						
Bismuth 212		0.495	+/- 0.270	0.156	+/- 0.270	0.331	pCi/g						
Bismuth 214		0.538	+/- 0.0906	0.0344	+/- 0.0906	0.0727	pCi/g						
Cesium 134	UI	0.00	+/- 0.0327	0.0243	+/- 0.0327	0.0513	pCi/g						
Cesium 137		0.347	+/- 0.0464	0.0191	+/- 0.0464	0.0405	pCi/g						
Cobalt 60		0.655	+/- 0.0758	0.0183	+/- 0.0758	0.0402	pCi/g						
Europium 152	U	0.0264	+/- 0.0656	0.0534	+/- 0.0656	0.111	pCi/g						
Europium 154	U	0.0739	+/- 0.0791	0.0704	+/- 0.0791	0.151	pCi/g						
Europium 155	U	0.0911	+/- 0.0754	0.0532	+/- 0.0754	0.110	pCi/g						
Lead 212		0.704	+/- 0.0622	0.0298	+/- 0.0622	0.0617	pCi/g						
Lead 214		0.608	+/- 0.0947	0.0394	+/- 0.0947	0.082	pCi/g						
Manganese 54	U	0.00361	+/- 0.0246	0.0205	+/- 0.0246	0.0435	pCi/g						
Niobium 94	U	0.000366	+/- 0.0209	0.0178	+/- 0.0209	0.0375	pCi/g						
Potassium 40		11.8	+/- 0.881	0.173	+/- 0.881	0.383	pCi/g						
Radium 226		0.538	+/- 0.0906	0.0344	+/- 0.0906	0.0727	pCi/g						
Silver 108m	U	0.00627	+/- 0.0213	0.0172	+/- 0.0213	0.036	pCi/g						
Thallium 208		0.255	+/- 0.0488	0.019	+/- 0.0488	0.0402	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00327	+/- 0.016	0.0172	+/- 0.016	0.0388	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 012F  
Sample ID: 167556019

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			60		(25% 125%)						

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 013F  
Sample ID: 167556020  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 41.1%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.891	+/- 0.296	0.109	+/- 0.296	0.229	pCi/g		MJH1	08/03/06	0749	551078	1
Americium 241	U	0.0308	+/- 0.0435	0.0365	+/- 0.0435	0.075	pCi/g						
Bismuth 212		0.554	+/- 0.355	0.234	+/- 0.355	0.491	pCi/g						
Bismuth 214		0.659	+/- 0.156	0.051	+/- 0.156	0.107	pCi/g						
Cesium 134	U	0.0764	+/- 0.0633	0.037	+/- 0.0633	0.0775	pCi/g						
Cesium 137		0.443	+/- 0.0825	0.0307	+/- 0.0825	0.0644	pCi/g						
Cobalt 60		0.705	+/- 0.111	0.0289	+/- 0.111	0.0624	pCi/g						
Europium 152	U	0.0411	+/- 0.0808	0.0675	+/- 0.0808	0.140	pCi/g						
Europium 154	U	0.0205	+/- 0.112	0.0911	+/- 0.112	0.194	pCi/g						
Europium 155	U	0.0149	+/- 0.0911	0.0565	+/- 0.0911	0.116	pCi/g						
Lead 212		0.709	+/- 0.0944	0.0452	+/- 0.0944	0.0928	pCi/g						
Lead 214		0.683	+/- 0.115	0.0491	+/- 0.115	0.102	pCi/g						
Manganese 54	U	0.0037	+/- 0.0425	0.0344	+/- 0.0425	0.072	pCi/g						
Niobium 94	U	0.0225	+/- 0.0323	0.0278	+/- 0.0323	0.0582	pCi/g						
Potassium 40		12.2	+/- 1.24	0.295	+/- 1.24	0.635	pCi/g						
Radium 226		0.659	+/- 0.156	0.051	+/- 0.156	0.107	pCi/g						
Silver 108m	U	0.00193	+/- 0.0268	0.0231	+/- 0.0268	0.0482	pCi/g						
Thallium 208		0.222	+/- 0.080	0.0294	+/- 0.080	0.0616	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.005	+/- 0.0179	0.0191	+/- 0.0179	0.0425	pCi/g		BXF1	07/31/06	1228	550820	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	07/21/06	1531	550552

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 013F  
Sample ID: 167556020

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>	<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL	FSS		64						(25%	125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID:	9106 0015 014F	Project:	YANK01204
Sample ID:	167556021	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	28 JUN 06		
Receive Date:	21 JUL 06		
Collector:	Client		
Moisture:	64.3%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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**Rad Gamma Spec Analysis**

*Gamma, Solid FSS GAM & ALL FSS 226 Ingrowth  
Waived*

Actinium 228		0.857	+/- 0.320	0.114	+/- 0.320	0.236	pCi/g		MJH1	08/03/06	2120	551081	1
Americium 241	U	0.014	+/- 0.0435	0.0317	+/- 0.0435	0.0646	pCi/g						
Bismuth 212		0.585	+/- 0.605	0.244	+/- 0.605	0.504	pCi/g						
Bismuth 214		0.756	+/- 0.167	0.0568	+/- 0.167	0.117	pCi/g						
Cesium 134	UI	0.00	+/- 0.0662	0.039	+/- 0.0662	0.0804	pCi/g						
Cesium 137	U	0.0443	+/- 0.0394	0.0328	+/- 0.0394	0.0676	pCi/g						
Cobalt 60	U	0.0432	+/- 0.0428	0.0365	+/- 0.0428	0.0762	pCi/g						
Europium 152	U	0.0422	+/- 0.0867	0.0654	+/- 0.0867	0.134	pCi/g						
Europium 154	U	0.103	+/- 0.118	0.0905	+/- 0.118	0.190	pCi/g						
Europium 155	U	0.066	+/- 0.0764	0.0567	+/- 0.0764	0.116	pCi/g						
Lead 212		1.01	+/- 0.0961	0.0357	+/- 0.0961	0.073	pCi/g						
Lead 214		0.850	+/- 0.139	0.0505	+/- 0.139	0.104	pCi/g						
Manganese 54	U	0.025	+/- 0.040	0.0305	+/- 0.040	0.0634	pCi/g						
Niobium 94	U	0.00255	+/- 0.0365	0.0289	+/- 0.0365	0.0597	pCi/g						
Potassium 40		13.2	+/- 1.43	0.284	+/- 1.43	0.601	pCi/g						
Radium 226		0.756	+/- 0.167	0.0568	+/- 0.167	0.117	pCi/g						
Silver 108m	U	0.0181	+/- 0.0311	0.0258	+/- 0.0311	0.053	pCi/g						
Thallium 208		0.273	+/- 0.095	0.0298	+/- 0.095	0.0615	pCi/g						

**Rad Gas Flow Proportional Counting**

*GFPC, Sr90, solid ALL FSS*

Strontium 90	U	0.0222	+/- 0.0208	0.0191	+/- 0.0208	0.0428	pCi/g		BXF1	07/30/06	1114	550821	2
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**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1518	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 014F  
Sample ID: 167556021

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			64		(25% 125%)						

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 016F  
Sample ID: 167556022  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 32.4%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.817	+/- 0.201	0.0536	+/- 0.201	0.115	pCi/g		MJH1	08/03/06	1539	551081	1
Americium 241	U	0.0173	+/- 0.0759	0.0648	+/- 0.0759	0.134	pCi/g						
Bismuth 212	UI	0.00	+/- 0.345	0.123	+/- 0.345	0.263	pCi/g						
Bismuth 214		0.697	+/- 0.118	0.0324	+/- 0.118	0.0682	pCi/g						
Cesium 134	U	0.0299	+/- 0.023	0.0212	+/- 0.023	0.0448	pCi/g						
Cesium 137		0.302	+/- 0.0569	0.0174	+/- 0.0569	0.0369	pCi/g						
Cobalt 60		0.101	+/- 0.0393	0.0204	+/- 0.0393	0.0439	pCi/g						
Europium 152	U	0.00133	+/- 0.0618	0.0463	+/- 0.0618	0.0967	pCi/g						
Europium 154	U	0.0226	+/- 0.0617	0.0523	+/- 0.0617	0.113	pCi/g						
Europium 155	U	0.00768	+/- 0.064	0.0541	+/- 0.064	0.112	pCi/g						
Lead 212		0.833	+/- 0.0921	0.0266	+/- 0.0921	0.0552	pCi/g						
Lead 214		0.647	+/- 0.110	0.0328	+/- 0.110	0.0685	pCi/g						
Manganese 54	U	0.00512	+/- 0.0208	0.0172	+/- 0.0208	0.0367	pCi/g						
Niobium 94	U	0.00927	+/- 0.0184	0.0162	+/- 0.0184	0.0343	pCi/g						
Potassium 40		12.4	+/- 1.11	0.126	+/- 1.11	0.282	pCi/g						
Radium 226		0.697	+/- 0.118	0.0324	+/- 0.118	0.0682	pCi/g						
Silver 108m	U	0.00762	+/- 0.0178	0.0153	+/- 0.0178	0.0322	pCi/g						
Thallium 208		0.252	+/- 0.0502	0.0177	+/- 0.0502	0.0374	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00259	+/- 0.0179	0.0207	+/- 0.0179	0.0464	pCi/g		BXF1	07/30/06	1225	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1518	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 016F  
Sample ID: 167556022

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			56		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 017F  
Sample ID: 167556023  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 32.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.849	+/- 0.216	0.0965	+/- 0.216	0.193	pCi/g		MJHI	08/03/06	1549	551081	1
Americium 241	U	0.0909	+/- 0.107	0.0747	+/- 0.107	0.149	pCi/g						
Bismuth 212		0.493	+/- 0.275	0.192	+/- 0.275	0.383	pCi/g						
Bismuth 214		0.503	+/- 0.103	0.043	+/- 0.103	0.0859	pCi/g						
Cesium 134	U	0.0541	+/- 0.0346	0.0323	+/- 0.0346	0.0645	pCi/g						
Cesium 137		0.474	+/- 0.0715	0.0241	+/- 0.0715	0.0482	pCi/g						
Cobalt 60		0.290	+/- 0.0732	0.0295	+/- 0.0732	0.0589	pCi/g						
Europium 152	U	0.0207	+/- 0.0897	0.0626	+/- 0.0897	0.125	pCi/g						
Europium 154	U	0.0229	+/- 0.0979	0.0808	+/- 0.0979	0.162	pCi/g						
Europium 155	U	0.0412	+/- 0.075	0.063	+/- 0.075	0.126	pCi/g						
Lead 212	UI	0.00	+/- 0.101	0.0367	+/- 0.101	0.0734	pCi/g						
Lead 214		0.663	+/- 0.129	0.0442	+/- 0.129	0.0884	pCi/g						
Manganese 54	U	0.00553	+/- 0.0317	0.0263	+/- 0.0317	0.0526	pCi/g						
Niobium 94	U	0.016	+/- 0.0283	0.0216	+/- 0.0283	0.0431	pCi/g						
Potassium 40		13.0	+/- 1.28	0.217	+/- 1.28	0.433	pCi/g						
Radium 226		0.503	+/- 0.103	0.043	+/- 0.103	0.0859	pCi/g						
Silver 108m	U	0.0122	+/- 0.0283	0.0228	+/- 0.0283	0.0457	pCi/g						
Thallium 208		0.278	+/- 0.0618	0.0209	+/- 0.0618	0.0417	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00449	+/- 0.0181	0.0193	+/- 0.0181	0.0436	pCi/g		BXF1	07/30/06	1225	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1518	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 017F  
Sample ID: 167556023

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			59		(25% 125%)					

### Notes:

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  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 019F  
Sample ID: 167556024  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 61%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		1.02	+/- 0.176	0.0562	+/- 0.176	0.117	pCi/g		MJH1	08/03/06	2120	551081	1
Americium 241	U	0.00165	+/- 0.133	0.0887	+/- 0.133	0.181	pCi/g						
Bismuth 212		0.713	+/- 0.308	0.131	+/- 0.308	0.271	pCi/g						
Bismuth 214		0.745	+/- 0.126	0.0324	+/- 0.126	0.0668	pCi/g						
Cesium 134	U	0.0417	+/- 0.0377	0.0205	+/- 0.0377	0.0423	pCi/g						
Cesium 137		0.0901	+/- 0.0369	0.0172	+/- 0.0369	0.0356	pCi/g						
Cobalt 60		0.238	+/- 0.0442	0.0163	+/- 0.0442	0.0345	pCi/g						
Europium 152	U	0.0236	+/- 0.0532	0.0428	+/- 0.0532	0.088	pCi/g						
Europium 154	U	0.0354	+/- 0.0642	0.0531	+/- 0.0642	0.111	pCi/g						
Europium 155	U	0.0656	+/- 0.103	0.0483	+/- 0.103	0.0987	pCi/g						
Lead 212		1.14	+/- 0.072	0.0248	+/- 0.072	0.0508	pCi/g						
Lead 214		0.884	+/- 0.0967	0.0303	+/- 0.0967	0.0623	pCi/g						
Manganese 54	UI	0.00	+/- 0.0255	0.0166	+/- 0.0255	0.0344	pCi/g						
Niobium 94	U	0.0232	+/- 0.0205	0.0153	+/- 0.0205	0.0317	pCi/g						
Potassium 40		16.7	+/- 0.832	0.141	+/- 0.832	0.299	pCi/g						
Radium 226		0.745	+/- 0.126	0.0324	+/- 0.126	0.0668	pCi/g						
Silver 108m	U	0.00571	+/- 0.0182	0.0148	+/- 0.0182	0.0306	pCi/g						
Thallium 208		0.273	+/- 0.0515	0.0165	+/- 0.0515	0.0341	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00959	+/- 0.0191	0.0192	+/- 0.0191	0.0437	pCi/g		BXF1	07/30/06	1225	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1518	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 019F  
Sample ID: 167556024

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL	FSS		56		(25% 125%)					

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 020F  
Sample ID: 167556025  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 53%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		1.06	+/- 0.220	0.0646	+/- 0.220	0.135	pCi/g		MJH1	08/03/06	2314	551081	1
Americium 241	U	0.0148	+/- 0.0265	0.0213	+/- 0.0265	0.0434	pCi/g						
Bismuth 212		0.646	+/- 0.287	0.139	+/- 0.287	0.291	pCi/g						
Bismuth 214		0.728	+/- 0.122	0.0344	+/- 0.122	0.0714	pCi/g						
Cesium 134	U	0.0341	+/- 0.0405	0.0236	+/- 0.0405	0.0489	pCi/g						
Cesium 137		0.0979	+/- 0.0494	0.0192	+/- 0.0494	0.040	pCi/g						
Cobalt 60		0.203	+/- 0.0509	0.0191	+/- 0.0509	0.0406	pCi/g						
Europium 152	U	0.0475	+/- 0.0527	0.0444	+/- 0.0527	0.0915	pCi/g						
Europium 154	U	0.0684	+/- 0.0693	0.060	+/- 0.0693	0.127	pCi/g						
Europium 155	U	0.0653	+/- 0.0648	0.0373	+/- 0.0648	0.0761	pCi/g						
Lead 212		1.09	+/- 0.137	0.0234	+/- 0.137	0.048	pCi/g						
Lead 214		0.920	+/- 0.130	0.031	+/- 0.130	0.0638	pCi/g						
Manganese 54	U	0.0291	+/- 0.0221	0.0191	+/- 0.0221	0.0399	pCi/g						
Niobium 94	U	0.00245	+/- 0.0226	0.0179	+/- 0.0226	0.0371	pCi/g						
Potassium 40		14.7	+/- 1.23	0.170	+/- 1.23	0.364	pCi/g						
Radium 226		0.728	+/- 0.122	0.0344	+/- 0.122	0.0714	pCi/g						
Silver 108m	U	0.00757	+/- 0.026	0.0162	+/- 0.026	0.0334	pCi/g						
Thallium 208		0.306	+/- 0.0675	0.0174	+/- 0.0675	0.0362	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00828	+/- 0.0139	0.0175	+/- 0.0139	0.0396	pCi/g		BXF1	07/30/06	1226	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1518	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 020F  
Sample ID: 167556025

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			64		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 005FS  
Sample ID: 167556026  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 40.6%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.841	+/- 0.177	0.0452	+/- 0.177	0.0951	pCi/g		MJH1	08/03/06	2033	551081	1
Americium 241	U	0.000696	+/- 0.103	0.0865	+/- 0.103	0.177	pCi/g						
Bismuth 212		0.288	+/- 0.248	0.104	+/- 0.248	0.216	pCi/g						
Bismuth 214		0.526	+/- 0.0834	0.0251	+/- 0.0834	0.052	pCi/g						
Cesium 134	UI	0.00	+/- 0.0198	0.0173	+/- 0.0198	0.036	pCi/g						
Cesium 137		0.222	+/- 0.0438	0.0156	+/- 0.0438	0.0322	pCi/g						
Cobalt 60		0.0632	+/- 0.0366	0.0159	+/- 0.0366	0.0337	pCi/g						
Europium 152	U	0.0128	+/- 0.0469	0.0373	+/- 0.0469	0.0768	pCi/g						
Europium 154	U	0.0345	+/- 0.055	0.0434	+/- 0.055	0.0917	pCi/g						
Europium 155	U	0.0594	+/- 0.0588	0.0374	+/- 0.0588	0.0765	pCi/g						
Lead 212		0.974	+/- 0.106	0.0201	+/- 0.106	0.0412	pCi/g						
Lead 214		0.689	+/- 0.0946	0.0264	+/- 0.0946	0.0544	pCi/g						
Manganese 54	UI	0.00	+/- 0.0229	0.015	+/- 0.0229	0.0312	pCi/g						
Niobium 94	U	0.00363	+/- 0.0156	0.0128	+/- 0.0156	0.0266	pCi/g						
Potassium 40		14.9	+/- 1.20	0.126	+/- 1.20	0.270	pCi/g						
Radium 226		0.526	+/- 0.0834	0.0251	+/- 0.0834	0.052	pCi/g						
Silver 108m	U	0.00987	+/- 0.0144	0.0123	+/- 0.0144	0.0254	pCi/g						
Thallium 208		0.291	+/- 0.0447	0.0128	+/- 0.0447	0.0267	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0149	+/- 0.0199	0.0194	+/- 0.0199	0.0434	pCi/g		BXF1	07/30/06	1226	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1518	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 005FS  
Sample ID: 167556026

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			63		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 012FS  
Sample ID: 167556027  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 35.6%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.760	+/- 0.213	0.0971	+/- 0.213	0.194	pCi/g		MJH1	08/03/06	1550	551081	1
Americium 241	U	0.0898	+/- 0.0992	0.082	+/- 0.0992	0.164	pCi/g						
Bismuth 212		0.493	+/- 0.353	0.168	+/- 0.353	0.336	pCi/g						
Bismuth 214	UI	0.00	+/- 0.114	0.0877	+/- 0.114	0.175	pCi/g						
Cesium 134	U	0.055	+/- 0.0454	0.0277	+/- 0.0454	0.0553	pCi/g						
Cesium 137		0.328	+/- 0.0634	0.0236	+/- 0.0634	0.0472	pCi/g						
Cobalt 60		0.626	+/- 0.0821	0.0189	+/- 0.0821	0.0379	pCi/g						
Europium 152	U	0.0189	+/- 0.0795	0.0579	+/- 0.0795	0.116	pCi/g						
Europium 154	U	0.0718	+/- 0.0877	0.0791	+/- 0.0877	0.158	pCi/g						
Europium 155	U	0.0413	+/- 0.0707	0.0612	+/- 0.0707	0.122	pCi/g						
Lead 212		0.719	+/- 0.0934	0.0327	+/- 0.0934	0.0654	pCi/g						
Lead 214		0.567	+/- 0.110	0.043	+/- 0.110	0.086	pCi/g						
Manganese 54	U	0.00108	+/- 0.0317	0.0268	+/- 0.0317	0.0536	pCi/g						
Niobium 94	U	0.00351	+/- 0.023	0.0187	+/- 0.023	0.0375	pCi/g						
Potassium 40		12.4	+/- 1.26	0.163	+/- 1.26	0.326	pCi/g						
Radium 226		0.503	+/- 0.114	0.0461	+/- 0.114	0.0922	pCi/g						
Silver 108m	U	0.0149	+/- 0.0244	0.0214	+/- 0.0244	0.0428	pCi/g						
Thallium 208		0.203	+/- 0.0574	0.0236	+/- 0.0574	0.0473	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00815	+/- 0.0147	0.0147	+/- 0.0147	0.0332	pCi/g		BXF1	07/30/06	1226	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1519	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 012FS  
Sample ID: 167556027

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			73		(25% 125%)						

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 018FS  
Sample ID: 167556028  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 52.8%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.727	+/- 0.341	0.142	+/- 0.341	0.283	pCi/g		MJH1	08/03/06	1551	551081	1
Americium 241	U	0.0233	+/- 0.0517	0.0364	+/- 0.0517	0.0727	pCi/g						
Bismuth 212	U	0.576	+/- 0.466	0.289	+/- 0.466	0.577	pCi/g						
Bismuth 214		0.570	+/- 0.156	0.0628	+/- 0.156	0.126	pCi/g						
Cesium 134	U	0.0389	+/- 0.054	0.0427	+/- 0.054	0.0854	pCi/g						
Cesium 137		0.398	+/- 0.0986	0.0407	+/- 0.0986	0.0813	pCi/g						
Cobalt 60		1.09	+/- 0.120	0.0241	+/- 0.120	0.0482	pCi/g						
Europium 152	U	0.0152	+/- 0.131	0.0839	+/- 0.131	0.168	pCi/g						
Europium 154	U	0.0517	+/- 0.129	0.112	+/- 0.129	0.223	pCi/g						
Europium 155	U	0.00474	+/- 0.0783	0.0646	+/- 0.0783	0.129	pCi/g						
Lead 212		0.948	+/- 0.122	0.0394	+/- 0.122	0.0788	pCi/g						
Lead 214		0.672	+/- 0.155	0.059	+/- 0.155	0.118	pCi/g						
Manganese 54	U	0.022	+/- 0.0519	0.0422	+/- 0.0519	0.0843	pCi/g						
Niobium 94	U	0.0292	+/- 0.0385	0.0344	+/- 0.0385	0.0688	pCi/g						
Potassium 40		13.2	+/- 1.54	0.306	+/- 1.54	0.612	pCi/g						
Radium 226		0.570	+/- 0.156	0.0628	+/- 0.156	0.126	pCi/g						
Silver 108m	U	0.0123	+/- 0.0354	0.0287	+/- 0.0354	0.0573	pCi/g						
Thallium 208		0.334	+/- 0.0879	0.0337	+/- 0.0879	0.0673	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0146	+/- 0.0182	0.017	+/- 0.0183	0.039	pCi/g		BXF1	07/30/06	1226	550821	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1519	550554

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424

Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 018FS  
Sample ID: 167556028

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>						
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			58		(25% 125%)						

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 021F  
Sample ID: 167556029  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 1.03%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.162	+/- 0.221	0.311	+/- 0.222	0.778	pCi/g		MXA	08/01/06	0823	552678	1
Curium 242	U	0.0918	+/- 0.285	0.255	+/- 0.285	0.693	pCi/g						
Curium 243/244	U	0.287	+/- 0.361	0.274	+/- 0.364	0.705	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.00298	+/- 0.114	0.120	+/- 0.114	0.341	pCi/g		JXG1	07/27/06	1535	550872	2
Plutonium 239/240	U	0.00	+/- 0.0729	0.00	+/- 0.0729	0.101	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	4.29	+/- 8.51	7.32	+/- 8.52	15.3	pCi/g		JXG1	08/03/06	0118	550873	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.790	+/- 0.172	0.0624	+/- 0.172	0.136	pCi/g		MJH1	08/03/06	1646	551081	4
Americium 241	U	0.0198	+/- 0.114	0.0743	+/- 0.114	0.154	pCi/g						
Bismuth 212		0.359	+/- 0.298	0.143	+/- 0.298	0.307	pCi/g						
Bismuth 214		0.508	+/- 0.0957	0.0358	+/- 0.0957	0.0762	pCi/g						
Cesium 134	U	0.0251	+/- 0.0294	0.0208	+/- 0.0294	0.0447	pCi/g						
Cesium 137		0.398	+/- 0.0607	0.0188	+/- 0.0607	0.0402	pCi/g						
Cobalt 60	UI	0.00	+/- 0.0661	0.0192	+/- 0.0661	0.0427	pCi/g						
Europium 152	U	0.0597	+/- 0.0735	0.0515	+/- 0.0735	0.108	pCi/g						
Europium 154	U	0.0284	+/- 0.0714	0.0577	+/- 0.0714	0.127	pCi/g						
Europium 155	U	0.0771	+/- 0.0795	0.0563	+/- 0.0795	0.116	pCi/g						
Lead 212		0.668	+/- 0.0704	0.0297	+/- 0.0704	0.0617	pCi/g						
Lead 214		0.682	+/- 0.0987	0.0351	+/- 0.0987	0.0739	pCi/g						
Manganese 54	U	0.00723	+/- 0.0238	0.0195	+/- 0.0238	0.0419	pCi/g						
Niobium 94	U	0.0046	+/- 0.0252	0.0183	+/- 0.0252	0.039	pCi/g						
Potassium 40		10.7	+/- 0.959	0.144	+/- 0.959	0.330	pCi/g						
Radium 226		0.508	+/- 0.0957	0.0358	+/- 0.0957	0.0762	pCi/g						
Silver 108m	U	0.0179	+/- 0.0211	0.0167	+/- 0.0211	0.0354	pCi/g						
Thallium 208		0.259	+/- 0.0511	0.0181	+/- 0.0511	0.0386	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0117	+/- 0.0147	0.0189	+/- 0.0147	0.0418	pCi/g		BXF1	07/30/06	1226	550821	5
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 021F  
Sample ID: 167556029

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	1.36	+/- 6.20	5.10	+/- 6.20	11.0	pCi/g		NXP1	08/02/06	1942	550850	6
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.049	+/- 0.124	0.105	+/- 0.124	0.213	pCi/g		ATH2	07/29/06	0827	550851	7
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	0.0337	+/- 19.0	15.0	+/- 19.0	31.7	pCi/g		MXP1	08/03/06	1159	550847	8
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	5.71	+/- 6.73	5.83	+/- 6.73	12.0	pCi/g		MXP1	08/14/06	0806	556697	9
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.281	+/- 0.191	0.150	+/- 0.191	0.311	pCi/g		EGD1	08/03/06	1847	550849	11

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1519	550554

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EML HASL 300, 4.5.2.3
5	EPA 905.0 Modified
6	EPA 906.0 Modified
7	EPA EERF C 01 Modified
8	DOE RESL Fe 1, Modified
9	DOE RESL Ni 1, Modified
10	DOE RESL Ni 1, Modified
11	DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	53	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	76	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	79	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	69	(25% 125%)

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 021F  
Sample ID: 167556029

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
Carrier/Tracer Recovery		Liquid Scint Fe55, Solid	ALL FS		95		(15% 125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid	ALL FS		82		(25% 125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid	ALL FS		87		(15% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 004F  
Sample ID: 167556030  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client  
Moisture: 26.3%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.0595	+/- 0.0921	0.136	+/- 0.0924	0.366	pCi/g		MXA	08/01/06	0823	552678	1
Curium 242	U	0.0864	+/- 0.0564	0.137	+/- 0.0574	0.382	pCi/g						
Curium 243/244	U	0.0859	+/- 0.207	0.189	+/- 0.208	0.472	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0291	+/- 0.0571	0.00	+/- 0.0572	0.079	pCi/g		JXG1	07/27/06	1535	550872	2
Plutonium 239/240	U	0.0373	+/- 0.0841	0.0575	+/- 0.0842	0.194	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	2.82	+/- 8.21	7.01	+/- 8.22	14.6	pCi/g		JXG1	08/03/06	0134	550873	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.767	+/- 0.182	0.0447	+/- 0.182	0.0973	pCi/g		MJH1	08/03/06	1646	551081	4
Americium 241	U	0.0267	+/- 0.103	0.0846	+/- 0.103	0.175	pCi/g						
Bismuth 212		0.408	+/- 0.269	0.120	+/- 0.269	0.256	pCi/g						
Bismuth 214		0.550	+/- 0.101	0.0271	+/- 0.101	0.0574	pCi/g						
Cesium 134	U	0.0201	+/- 0.0204	0.0189	+/- 0.0204	0.0402	pCi/g						
Cesium 137	U	0.00856	+/- 0.0183	0.0147	+/- 0.0183	0.0313	pCi/g						
Cobalt 60	U	0.00974	+/- 0.0202	0.0177	+/- 0.0202	0.0384	pCi/g						
Europium 152	U	0.0233	+/- 0.0435	0.0395	+/- 0.0435	0.0826	pCi/g						
Europium 154	U	0.0107	+/- 0.0585	0.0477	+/- 0.0585	0.104	pCi/g						
Europium 155	U	0.0755	+/- 0.0498	0.0468	+/- 0.0498	0.0964	pCi/g						
Lead 212		0.734	+/- 0.083	0.0227	+/- 0.083	0.0471	pCi/g						
Lead 214		0.653	+/- 0.0961	0.026	+/- 0.0961	0.0545	pCi/g						
Manganese 54	U	0.0198	+/- 0.0254	0.0151	+/- 0.0254	0.0324	pCi/g						
Niobium 94	U	0.0179	+/- 0.0169	0.0152	+/- 0.0169	0.032	pCi/g						
Potassium 40		13.2	+/- 1.21	0.144	+/- 1.21	0.319	pCi/g						
Radium 226		0.550	+/- 0.101	0.0271	+/- 0.101	0.0574	pCi/g						
Silver 108m	U	0.00388	+/- 0.014	0.0124	+/- 0.014	0.0261	pCi/g						
Thallium 208		0.282	+/- 0.0555	0.0163	+/- 0.0555	0.0345	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0198	+/- 0.0185	0.0167	+/- 0.0185	0.0377	pCi/g		BXF1	07/30/06	1226	550821	5
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 004F  
Sample ID: 167556030

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	2.23	+/- 5.76	5.02	+/- 5.76	10.8	pCi/g		NXP1	08/02/06	1957	550850	6
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.00818	+/- 0.125	0.105	+/- 0.125	0.214	pCi/g		ATH2	07/29/06	1003	550851	7
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	14.1	+/- 21.5	16.4	+/- 21.7	34.7	pCi/g		MXP1	08/03/06	1216	550847	8
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	5.42	+/- 5.34	4.65	+/- 5.34	9.59	pCi/g		MXP1	08/14/06	0838	556697	9
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.178	+/- 0.190	0.153	+/- 0.190	0.317	pCi/g		EGD1	08/03/06	1946	550849	11

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1519	550554

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EML HASL 300, 4.5.2.3
5	EPA 905.0 Modified
6	EPA 906.0 Modified
7	EPA EERF C 01 Modified
8	DOE RESL Fe 1, Modified
9	DOE RESL Ni 1, Modified
10	DOE RESL Ni 1, Modified
11	DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	78	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	89	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	84	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	66	(25% 125%)

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Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 004F  
Sample ID: 167556030

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
Carrier/Tracer Recovery		Liquid Scint Fe55, Solid	ALL FS		91		(15% 125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid	ALL FS		95		(25% 125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid	ALL FS		85		(15% 125%)					

### Notes:

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  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID:	9106 0015 015F	Project:	YANK01204
Sample ID:	167556031	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	28 JUN 06		
Receive Date:	21 JUL 06		
Collector:	Client		
Moisture:	29.9%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.00402	+/- 0.0974	0.101	+/- 0.0974	0.287	pCi/g		MXA	08/01/06	0823	552678	1
Curium 242	U	0.0145	+/- 0.114	0.131	+/- 0.114	0.360	pCi/g						
Curium 243/244	U	0.0227	+/- 0.170	0.190	+/- 0.170	0.465	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.00829	+/- 0.0163	0.0394	+/- 0.0163	0.172	pCi/g		JXG1	07/27/06	1535	550872	2
Plutonium 239/240	U	0.0497	+/- 0.0398	0.0964	+/- 0.0401	0.286	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	4.09	+/- 8.10	6.97	+/- 8.11	14.5	pCi/g		JXG1	08/03/06	0150	550873	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.747	+/- 0.157	0.0482	+/- 0.157	0.103	pCi/g		MJH1	08/03/06	1646	551081	4
Americium 241	U	0.021	+/- 0.108	0.0836	+/- 0.108	0.173	pCi/g						
Bismuth 212		0.427	+/- 0.259	0.108	+/- 0.259	0.229	pCi/g						
Bismuth 214		0.531	+/- 0.0855	0.0268	+/- 0.0855	0.0563	pCi/g						
Cesium 134	UI	0.00	+/- 0.0359	0.0195	+/- 0.0359	0.0408	pCi/g						
Cesium 137		0.208	+/- 0.0325	0.0153	+/- 0.0325	0.0321	pCi/g						
Cobalt 60		0.0707	+/- 0.0298	0.0144	+/- 0.0298	0.0311	pCi/g						
Europium 152	U	0.0367	+/- 0.0423	0.0355	+/- 0.0423	0.0742	pCi/g						
Europium 154	U	0.011	+/- 0.0561	0.0453	+/- 0.0561	0.0969	pCi/g						
Europium 155	U	0.0566	+/- 0.0709	0.0483	+/- 0.0709	0.0997	pCi/g						
Lead 212		0.804	+/- 0.0557	0.0237	+/- 0.0557	0.049	pCi/g						
Lead 214		0.637	+/- 0.0847	0.0267	+/- 0.0847	0.0558	pCi/g						
Manganese 54	UI	0.00	+/- 0.0203	0.0129	+/- 0.0203	0.0276	pCi/g						
Niobium 94	U	0.0205	+/- 0.0372	0.0134	+/- 0.0372	0.0281	pCi/g						
Potassium 40		13.8	+/- 0.775	0.120	+/- 0.775	0.263	pCi/g						
Radium 226		0.531	+/- 0.0855	0.0268	+/- 0.0855	0.0563	pCi/g						
Silver 108m	U	0.00734	+/- 0.0147	0.013	+/- 0.0147	0.0272	pCi/g						
Thallium 208		0.242	+/- 0.0419	0.0146	+/- 0.0419	0.0306	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0211	+/- 0.0182	0.0161	+/- 0.0182	0.0363	pCi/g		BXF1	07/30/06	1226	550821	5
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
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East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 015F  
Sample ID: 167556031

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	2.73	+/- 7.57	6.14	+/- 7.57	13.3	pCi/g		NXP1	08/02/06	2013	550850	6
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.124	+/- 0.124	0.106	+/- 0.124	0.216	pCi/g		ATH2	07/29/06	1104	550851	7
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	3.86	+/- 16.9	13.2	+/- 16.9	27.8	pCi/g		MXP1	08/03/06	1232	550847	8
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	1.76	+/- 7.03	5.96	+/- 7.03	12.3	pCi/g		MXP1	08/14/06	0909	556697	9
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.175	+/- 0.186	0.150	+/- 0.186	0.311	pCi/g		EGD1	08/03/06	2002	550849	11

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	BSW1	07/21/06	1519	550554

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EML HASL 300, 4.5.2.3
5	EPA 905.0 Modified
6	EPA 906.0 Modified
7	EPA EERF C 01 Modified
8	DOE RESL Fe 1, Modified
9	DOE RESL Ni 1, Modified
10	DOE RESL Ni 1, Modified
11	DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	102	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	78	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	83	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	68	(25% 125%)

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 14, 2006

Client Sample ID: 9106 0015 015F  
Sample ID: 167556031

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Carrier/Tracer Recovery		Liquid Scint Fe55, Solid	ALL FS		97		(15% 125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid	ALL FS		86		(25% 125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid	ALL FS		87		(15% 125%)						

### Notes:

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  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# QUALITY CONTROL DATA

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Report Date: August 14, 2006  
Page 1 of 13

Client : Connecticut Yankee Atomic Power  
 362 Injun Hollow Rd  
 East Hampton, Connecticut  
 Contact: Mr. Jack McCarthy  
 Workorder: 167556

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	550872										
QC1201141928	167555016 DUP										
Plutonium-238	U	0.00	U	0.00115	pCi/g	200		(0% - 100%)	JXG1	07/27/06	15:35
	Uncert:	+/-0.0636		+/-0.0623							
	TPU:	+/-0.0636		+/-0.0623							
Plutonium-239/240	U	-0.00648	U	-0.0195	pCi/g	100		(0% - 100%)			
	Uncert:	+/-0.0721		+/-0.0665							
	TPU:	+/-0.0721		+/-0.0665							
QC1201141930	LCS										
Plutonium-238			U	-0.095	pCi/g			(75%-125%)		07/27/06	15:34
	Uncert:			+/-0.103							
	TPU:			+/-0.103							
Plutonium-239/240	12.0			9.17	pCi/g		76	(75%-125%)			
	Uncert:			+/-1.01							
	TPU:			+/-1.37							
QC1201141927	MB										
Plutonium-238			U	0.017	pCi/g					07/27/06	15:35
	Uncert:			+/-0.0678							
	TPU:			+/-0.0678							
Plutonium-239/240			U	0.0249	pCi/g						
	Uncert:			+/-0.066							
	TPU:			+/-0.0661							
QC1201141929	167555016 MS										
Plutonium-238	U	0.00	U	0.0791	pCi/g			(75%-125%)			
	Uncert:	+/-0.0636		+/-0.121							
	TPU:	+/-0.0636		+/-0.121							
Plutonium-239/240	12.3	U	-0.00648	11.9	pCi/g		97	(75%-125%)			
	Uncert:	+/-0.0721		+/-1.26							
	TPU:	+/-0.0721		+/-1.79							
Batch	550873										
QC1201141932	167555016 DUP										
Plutonium-241	U	-3.28	U	-3.69	pCi/g	0		(0% - 100%)	JXG1	08/03/06	02:22
	Uncert:	+/-7.74		+/-7.74							
	TPU:	+/-7.74		+/-7.75							
QC1201141934	LCS										
Plutonium-241	139			124	pCi/g		90	(75%-125%)		08/03/06	02:54
	Uncert:			+/-12.3							
	TPU:			+/-17.2							
QC1201141931	MB										
Plutonium-241			U	-3.62	pCi/g					08/03/06	02:06
	Uncert:			+/-8.07							
	TPU:			+/-8.08							
QC1201141933	167555016 MS										
Plutonium-241	140	U	-3.28	133	pCi/g		95	(75%-125%)		08/03/06	02:38
	Uncert:	+/-7.74		+/-13.0							

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**QC Summary**

Workorder: 167556

Page 2 of 13

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>										
Batch	550873									
	TPU:	+/-7.74	+/-18.3							
Batch	552678									
QC1201146078	167555016 DUP									
Americium-241	U	0.166	U	0.0987	pCi/g	51	(0% - 100%)	AXA1	08/01/06	12:11
	Uncert:	+/-0.236		+/-0.149						
	TPU:	+/-0.237		+/-0.149						
Curium-242	U	0.0107	U	0.0613	pCi/g	141	(0% - 100%)			
	Uncert:	+/-0.0813		+/-0.0979						
	TPU:	+/-0.0814		+/-0.0982						
Curium-243/244	U	0.0872	U	0.0225	pCi/g	118	(0% - 100%)			
	Uncert:	+/-0.181		+/-0.169						
	TPU:	+/-0.181		+/-0.169						
QC1201146080	LCS									
Americium-241	13.3			16.6	pCi/g		125 (75%-125%)			
	Uncert:			+/-1.61						
	TPU:			+/-2.68						
Curium-242			U	0.00	pCi/g					
	Uncert:			+/-0.0807						
	TPU:			+/-0.0807						
Curium-243/244	16.2			16.8	pCi/g		104 (75%-125%)			
	Uncert:			+/-1.63						
	TPU:			+/-2.71						
QC1201146077	MB									
Americium-241			U	-0.0657	pCi/g				08/01/06	08:23
	Uncert:			+/-0.0872						
	TPU:			+/-0.0876						
Curium-242			U	-0.0159	pCi/g					
	Uncert:			+/-0.022						
	TPU:			+/-0.0221						
Curium-243/244			U	0.0313	pCi/g					
	Uncert:			+/-0.172						
	TPU:			+/-0.172						
QC1201146079	167555016 MS									
Americium-241	13.6	U	0.166	13.0	pCi/g		96 (75%-125%)		08/01/06	12:11
	Uncert:		+/-0.236	+/-1.30						
	TPU:		+/-0.237	+/-2.05						
Curium-242		U	0.0107	U	-0.00953	pCi/g				
	Uncert:		+/-0.0813	+/-0.0187						
	TPU:		+/-0.0814	+/-0.0187						
Curium-243/244	16.6	U	0.0872	17.7	pCi/g		107 (75%-125%)			
	Uncert:		+/-0.181	+/-1.52						
	TPU:		+/-0.181	+/-2.65						
<b>Rad Gamma Spec</b>										
Batch	551078									
QC1201142454	167556001 DUP									
Actinium-228			0.799	0.934	pCi/g	38	(0% - 100%)	MJH1	08/03/06	07:50
	Uncert:		+/-0.156	+/-0.173						
	TPU:		+/-0.156	+/-0.173						



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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	551078										
Americium-241	U	0.0246	U	0.016	pCi/g	122		(0% - 100%)			
	Uncert:	+/-0.104		+/-0.113							
	TPU:	+/-0.104		+/-0.113							
Bismuth-212		0.457		0.333	pCi/g	32		(0% - 100%)			
	Uncert:	+/-0.238		+/-0.245							
	TPU:	+/-0.238		+/-0.245							
Bismuth-214		0.612		0.623	pCi/g	1		(0% - 100%)			
	Uncert:	+/-0.0886		+/-0.0891							
	TPU:	+/-0.0886		+/-0.0891							
Cesium-134	U	0.0453	U	0.0442	pCi/g	5		(0% - 100%)			
	Uncert:	+/-0.0355		+/-0.0223							
	TPU:	+/-0.0355		+/-0.0223							
Cesium-137		0.346		0.426	pCi/g	23		(0% - 100%)			
	Uncert:	+/-0.0445		+/-0.0418							
	TPU:	+/-0.0445		+/-0.0418							
Cobalt-60		0.697		0.882	pCi/g	20*		(0%-20%)			
	Uncert:	+/-0.0732		+/-0.0656							
	TPU:	+/-0.0732		+/-0.0656							
Europium-152	U	0.0354	U	-0.00721	pCi/g	2650		(0% - 100%)			
	Uncert:	+/-0.0503		+/-0.051							
	TPU:	+/-0.0503		+/-0.051							
Europium-154	U	-0.00728	UI	0.00	pCi/g	151		(0% - 100%)			
	Uncert:	+/-0.0592		+/-0.0709							
	TPU:	+/-0.0592		+/-0.0709							
Europium-155	U	0.0128	U	0.0488	pCi/g	42		(0% - 100%)			
	Uncert:	+/-0.0649		+/-0.0617							
	TPU:	+/-0.0649		+/-0.0617							
Lead-212		0.742		0.848	pCi/g	12		(0% - 20%)			
	Uncert:	+/-0.0572		+/-0.0639							
	TPU:	+/-0.0572		+/-0.0639							
Lead-214		0.625		0.666	pCi/g	5		(0% - 20%)			
	Uncert:	+/-0.0879		+/-0.0868							
	TPU:	+/-0.0879		+/-0.0868							
Manganese-54	U	0.022	U	0.00611	pCi/g	156		(0% - 100%)			
	Uncert:	+/-0.0235		+/-0.0227							
	TPU:	+/-0.0235		+/-0.0227							
Niobium-94	U	0.00715	U	0.0114	pCi/g	46		(0% - 100%)			
	Uncert:	+/-0.0183		+/-0.0172							
	TPU:	+/-0.0183		+/-0.0172							
Potassium-40		12.5		14.1	pCi/g	12		(0% - 20%)			
	Uncert:	+/-0.783		+/-0.877							
	TPU:	+/-0.783		+/-0.877							
Radium-226		0.612		0.623	pCi/g	1		(0% - 100%)			
	Uncert:	+/-0.0886		+/-0.0891							
	TPU:	+/-0.0886		+/-0.0891							
Silver-108m	U	0.00466	U	-0.00177	pCi/g	424		(0% - 100%)			
	Uncert:	+/-0.0164		+/-0.0177							
	TPU:	+/-0.0164		+/-0.0177							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	551078									
Thallium-208		0.219	0.243	pCi/g	18		(0% - 100%)			
	Uncert:	+/-0.0428	+/-0.0419							
	TPU:	+/-0.0428	+/-0.0419							
QC1201142455	LCS									
Actinium-228			U 0.0932	pCi/g					08/03/06	07:51
	Uncert:		+/-0.385							
	TPU:		+/-0.385							
Americium-241	23.4		25.5	pCi/g		109	(75%-125%)			
	Uncert:		+/-2.06							
	TPU:		+/-2.06							
Bismuth-212			U -0.0457	pCi/g						
	Uncert:		+/-0.703							
	TPU:		+/-0.703							
Bismuth-214			U -0.0521	pCi/g						
	Uncert:		+/-0.173							
	TPU:		+/-0.173							
Cesium-134			U 0.0241	pCi/g						
	Uncert:		+/-0.0978							
	TPU:		+/-0.0978							
Cesium-137	9.60		10.7	pCi/g		111	(75%-125%)			
	Uncert:		+/-0.956							
	TPU:		+/-0.956							
Cobalt-60	14.7		15.2	pCi/g		103	(75%-125%)			
	Uncert:		+/-0.948							
	TPU:		+/-0.948							
Europium-152			U -0.0199	pCi/g						
	Uncert:		+/-0.228							
	TPU:		+/-0.228							
Europium-154			U -0.00469	pCi/g						
	Uncert:		+/-0.229							
	TPU:		+/-0.229							
Europium-155			U -0.0534	pCi/g						
	Uncert:		+/-0.275							
	TPU:		+/-0.275							
Lead-212			U 0.131	pCi/g						
	Uncert:		+/-0.129							
	TPU:		+/-0.129							
Lead-214			U -0.0264	pCi/g						
	Uncert:		+/-0.155							
	TPU:		+/-0.155							
Manganese-54			U -0.0301	pCi/g						
	Uncert:		+/-0.0923							
	TPU:		+/-0.0923							
Niobium-94			U 0.0336	pCi/g						
	Uncert:		+/-0.0841							
	TPU:		+/-0.0841							
Potassium-40			U 0.279	pCi/g						
	Uncert:		+/-0.767							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>										
Batch	551078									
Radium-226	TPU:		+/-0.767							
	Uncert:	U	-0.0521	pCi/g						
	TPU:		+/-0.173							
Silver-108m	TPU:	U	0.0643	pCi/g						
	Uncert:		+/-0.0799							
	TPU:		+/-0.0799							
Thallium-208	TPU:	U	0.0241	pCi/g						
	Uncert:		+/-0.0853							
	TPU:		+/-0.0853							
QC1201142453 MB										
Actinium-228		U	0.0428	pCi/g					08/03/06	07:50
	Uncert:		+/-0.100							
	TPU:		+/-0.100							
Americium-241		U	-0.0272	pCi/g						
	Uncert:		+/-0.0189							
	TPU:		+/-0.0189							
Bismuth-212		U	0.0764	pCi/g						
	Uncert:		+/-0.150							
	TPU:		+/-0.150							
Bismuth-214		U	0.0338	pCi/g						
	Uncert:		+/-0.0366							
	TPU:		+/-0.0366							
Cesium-134		U	0.00494	pCi/g						
	Uncert:		+/-0.0199							
	TPU:		+/-0.0199							
Cesium-137		U	0.00159	pCi/g						
	Uncert:		+/-0.0169							
	TPU:		+/-0.0169							
Cobalt-60		UI	0.00	pCi/g						
	Uncert:		+/-0.0635							
	TPU:		+/-0.0635							
Europium-152		U	0.0138	pCi/g						
	Uncert:		+/-0.0386							
	TPU:		+/-0.0386							
Europium-154		U	0.0793	pCi/g						
	Uncert:		+/-0.059							
	TPU:		+/-0.059							
Europium-155		U	-0.0205	pCi/g						
	Uncert:		+/-0.0333							
	TPU:		+/-0.0333							
Lead-212		U	0.0209	pCi/g						
	Uncert:		+/-0.0501							
	TPU:		+/-0.0501							
Lead-214		U	0.0167	pCi/g						
	Uncert:		+/-0.0313							
	TPU:		+/-0.0313							
Manganese-54		U	-0.00145	pCi/g						

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
<b>Rad Gamma Spec</b>									
Batch	551078								
		Uncert:							
		TPU:							
Niobium-94			U						
		Uncert:							
		TPU:							
Potassium-40			U						
		Uncert:							
		TPU:							
Radium-226			U						
		Uncert:							
		TPU:							
Silver-108m			U						
		Uncert:							
		TPU:							
Thallium-208			U						
		Uncert:							
		TPU:							
Batch	551081								
	QC1201142460 167556029 DUP								
Actinium-228		0.790		0.488	pCi/g	47	(0% - 100%)	MJH1	08/03/06 20:35
		Uncert:							
		TPU:							
Americium-241	U	0.0198	U	0.00445	pCi/g	127	(0% - 100%)		
		Uncert:							
		TPU:							
Bismuth-212		0.359		0.753	pCi/g	71	(0% - 100%)		
		Uncert:							
		TPU:							
Bismuth-214		0.508		0.502	pCi/g	1	(0% - 100%)		
		Uncert:							
		TPU:							
Cesium-134	U	0.0251	UI	0.00	pCi/g	108	(0% - 100%)		
		Uncert:							
		TPU:							
Cesium-137		0.398		0.431	pCi/g	8	(0% - 100%)		
		Uncert:							
		TPU:							
Cobalt-60	UI	0.00	U	0.0491	pCi/g	14	(0% - 100%)		
		Uncert:							
		TPU:							
Europium-152	U	0.0597	U	0.0396	pCi/g	40	(0% - 100%)		
		Uncert:							
		TPU:							
Europium-154	U	-0.0284	U	-0.0666	pCi/g	81	(0% - 100%)		
		Uncert:							
		TPU:							
Europium-155	U	0.0771	U	0.0902	pCi/g	16	(0% - 100%)		
		Uncert:							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>										
Batch	551081									
Lead-212		TPU: +/-0.0795	+/-0.0667							
		0.668	0.725	pCi/g	8		(0% - 20%)			
		Uncert: +/-0.0704	+/-0.115							
Lead-214		TPU: +/-0.0704	+/-0.115							
		0.682	0.682	pCi/g	0		(0% - 20%)			
		Uncert: +/-0.0987	+/-0.145							
Manganese-54	U	TPU: +/-0.0987	+/-0.145							
		-0.00723	-0.00539	pCi/g	29		(0% - 100%)			
		Uncert: +/-0.0238	+/-0.0291							
Niobium-94	U	TPU: +/-0.0238	+/-0.0291							
		-0.0046	0.00917	pCi/g	604		(0% - 100%)			
		Uncert: +/-0.0252	+/-0.0277							
Potassium-40		TPU: +/-0.0252	+/-0.0277							
		10.7	10.8	pCi/g	1		(0% - 20%)			
		Uncert: +/-0.959	+/-1.39							
Radium-226		TPU: +/-0.959	+/-1.39							
		0.508	0.502	pCi/g	1		(0% - 100%)			
		Uncert: +/-0.0957	+/-0.135							
Silver-108m	U	TPU: +/-0.0957	+/-0.135							
		-0.0179	-0.00479	pCi/g	116		(0% - 100%)			
		Uncert: +/-0.0211	+/-0.0252							
Thallium-208		TPU: +/-0.0211	+/-0.0252							
		0.259	0.201	pCi/g	25		(0% - 100%)			
		Uncert: +/-0.0511	+/-0.0618							
		TPU: +/-0.0511	+/-0.0618							
QC1201142461	LCS									
Actinium-228			U 0.679	pCi/g					08/04/06	05:20
		Uncert: +/-0.533								
Americium-241	23.4	TPU: +/-0.533	23.9	pCi/g		102	(75%-125%)			
		Uncert: +/-0.486								
Bismuth-212		TPU: +/-0.486								
		U -0.492		pCi/g						
		Uncert: +/-0.975								
Bismuth-214		TPU: +/-0.975								
		U 0.0917		pCi/g						
		Uncert: +/-0.224								
Cesium-134		TPU: +/-0.224								
		U 0.112		pCi/g						
		Uncert: +/-0.141								
Cesium-137	9.60	TPU: +/-0.141	10.4	pCi/g		108	(75%-125%)			
		Uncert: +/-0.482								
Cobalt-60	14.7	TPU: +/-0.482	15.1	pCi/g		103	(75%-125%)			
		Uncert: +/-0.658								
Europium-152		TPU: +/-0.658								
		U 0.251		pCi/g						

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	551081									
			Uncert:							
			TPU:							
Europium-154		U	-0.0933	pCi/g						
			Uncert:							
			TPU:							
Europium-155		U	0.0511	pCi/g						
			Uncert:							
			TPU:							
Lead-212		U	0.0671	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.0144	pCi/g						
			Uncert:							
			TPU:							
Manganese-54		U	0.0924	pCi/g						
			Uncert:							
			TPU:							
Niobium-94		U	0.0204	pCi/g						
			Uncert:							
			TPU:							
Potassium-40		U	-0.16	pCi/g						
			Uncert:							
			TPU:							
Radium-226		U	0.0917	pCi/g						
			Uncert:							
			TPU:							
Silver-108m		U	0.0594	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	0.00785	pCi/g						
			Uncert:							
			TPU:							
QC1201142459	MB									
Actinium-228		U	0.0349	pCi/g					08/03/06	16:47
			Uncert:							
			TPU:							
Americium-241		U	-0.0155	pCi/g						
			Uncert:							
			TPU:							
Bismuth-212		U	-0.00927	pCi/g						
			Uncert:							
			TPU:							
Bismuth-214		U	0.000364	pCi/g						
			Uncert:							
			TPU:							
Cesium-134		U	-0.0203	pCi/g						
			Uncert:							
			TPU:							

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	551081										
Cesium-137			U	0.00632	pCi/g						
	Uncert:			+/-0.0155							
	TPU:			+/-0.0155							
Cobalt-60			U	0.00791	pCi/g						
	Uncert:			+/-0.0133							
	TPU:			+/-0.0133							
Europium-152			U	0.0226	pCi/g						
	Uncert:			+/-0.0397							
	TPU:			+/-0.0397							
Europium-154			U	-0.0169	pCi/g						
	Uncert:			+/-0.0349							
	TPU:			+/-0.0349							
Europium-155			U	0.00825	pCi/g						
	Uncert:			+/-0.0314							
	TPU:			+/-0.0314							
Lead-212			UI	0.00	pCi/g						
	Uncert:			+/-0.0486							
	TPU:			+/-0.0486							
Lead-214			U	0.00294	pCi/g						
	Uncert:			+/-0.0376							
	TPU:			+/-0.0376							
Manganese-54			U	-0.005	pCi/g						
	Uncert:			+/-0.0155							
	TPU:			+/-0.0155							
Niobium-94			U	-0.00181	pCi/g						
	Uncert:			+/-0.0139							
	TPU:			+/-0.0139							
Potassium-40			U	0.133	pCi/g						
	Uncert:			+/-0.157							
	TPU:			+/-0.157							
Radium-226			U	0.000364	pCi/g						
	Uncert:			+/-0.0284							
	TPU:			+/-0.0284							
Silver-108m			U	0.0148	pCi/g						
	Uncert:			+/-0.0137							
	TPU:			+/-0.0137							
Thallium-208			U	0.0242	pCi/g						
	Uncert:			+/-0.0173							
	TPU:			+/-0.0173							
<b>Rad Gas Flow</b>											
Batch	550820										
QC1201141747	167556008 DUP										
Strontium-90		U	0.0128	U	-0.00326	pCi/g	0	(0% - 100%)	BXF1	07/31/06	12:27
	Uncert:		+/-0.0169		+/-0.0135						
	TPU:		+/-0.0169		+/-0.0135						
QC1201141749	LCS										
Strontium-90	1.48				1.27	pCi/g	86	(75%-125%)		07/31/06	14:58
	Uncert:				+/-0.0879						

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	550820										
QC1201141746	MB	TPU:		+/-0.0956							
Strontium-90			U	-0.0183	pCi/g					07/31/06	12:27
		Uncert:		+/-0.00866							
		TPU:		+/-0.00868							
QC1201141748	167556008	MS									
Strontium-90		1.56	U	0.0128	1.27	pCi/g	82	(75%-125%)		07/31/06	14:58
		Uncert:		+/-0.0169	+/-0.0963						
		TPU:		+/-0.0169	+/-0.104						
Batch	550821										
QC1201141751	167554004	DUP									
Strontium-90			U	-0.00221	U	-0.00355	pCi/g	0	(0% - 100%)	BXF1	07/30/06 12:41
		Uncert:		+/-0.0165	+/-0.0144						
		TPU:		+/-0.0165	+/-0.0144						
QC1201141753	LCS										
Strontium-90		1.53			1.55	pCi/g	102	(75%-125%)		07/30/06	17:23
		Uncert:			+/-0.101						
		TPU:			+/-0.111						
QC1201141750	MB										
Strontium-90			U	-0.00113	pCi/g					07/30/06	12:26
		Uncert:			+/-0.014						
		TPU:			+/-0.014						
QC1201141752	167554004	MS									
Strontium-90		1.54	U	-0.00221	1.43	pCi/g	93	(75%-125%)		07/30/06	12:41
		Uncert:		+/-0.0165	+/-0.136						
		TPU:		+/-0.0165	+/-0.142						
<b>Rad Liquid Scintillation</b>											
Batch	550847										
QC1201141836	167555017	DUP									
Iron-55			U	8.69	U	0.0266	pCi/g	0	(0% - 100%)	MXP1	08/03/06 13:05
		Uncert:		+/-22.8	+/-15.1						
		TPU:		+/-22.9	+/-15.1						
QC1201141838	LCS										
Iron-55		580			449	pCi/g	78	(75%-125%)		08/03/06	13:37
		Uncert:			+/-34.1						
		TPU:			+/-88.0						
QC1201141835	MB										
Iron-55			U	5.19	pCi/g					08/03/06	12:48
		Uncert:			+/-20.9						
		TPU:			+/-20.9						
QC1201141837	167555017	MS									
Iron-55		663	U	8.69	553	pCi/g	83	(75%-125%)		08/03/06	13:21
		Uncert:		+/-22.8	+/-43.5						
		TPU:		+/-22.9	+/-119						
Batch	550849										
QC1201141844	167556030	DUP									
Technetium-99			U	0.178	U	0.247	pCi/g	0	(0% - 100%)	EGD1	08/03/06 20:34
		Uncert:		+/-0.190	+/-0.188						
		TPU:		+/-0.190	+/-0.188						



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**QC Summary**

Workorder: 167556

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	550849										
QC1201141846	LCS										
Technetium-99	13.1			12.2	pCi/g		93	(75%-125%)		08/03/06	21:06
	Uncert:			+/-0.459							
	TPU:			+/-0.536							
QC1201141843	MB										
Technetium-99			U	0.155	pCi/g					08/03/06	20:18
	Uncert:			+/-0.172							
	TPU:			+/-0.172							
QC1201141845	167556030	MS									
Technetium-99	12.8	U	0.178	11.9	pCi/g		92	(75%-125%)		08/03/06	20:50
	Uncert:		+/-0.190	+/-0.459							
	TPU:		+/-0.190	+/-0.532							
Batch	550850										
QC1201141848	167556031	DUP									
Tritium		U	2.73	U	0.00	pCi/g	0	(0% - 100%)	NXP1	08/02/06	20:45
	Uncert:		+/-7.57	+/-6.18							
	TPU:		+/-7.57	+/-6.18							
QC1201141850	LCS										
Tritium	68.4			56.4	pCi/g		83	(75%-125%)		08/02/06	21:17
	Uncert:			+/-12.5							
	TPU:			+/-12.5							
QC1201141847	MB										
Tritium			U	3.69	pCi/g					08/02/06	20:29
	Uncert:			+/-8.58							
	TPU:			+/-8.58							
QC1201141849	167556031	MS									
Tritium	63.9	U	2.73	55.0	pCi/g		86	(75%-125%)		08/02/06	21:01
	Uncert:		+/-7.57	+/-11.8							
	TPU:		+/-7.57	+/-11.9							
Batch	550851										
QC1201141852	167556029	DUP									
Carbon-14		U	-0.049	U	-0.229	pCi/g	0	(0% - 100%)	ATH2	08/03/06	00:16
	Uncert:		+/-0.124	+/-0.108							
	TPU:		+/-0.124	+/-0.108							
QC1201141854	LCS										
Carbon-14	7.10			6.83	pCi/g		96	(75%-125%)		07/29/06	16:11
	Uncert:			+/-0.238							
	TPU:			+/-0.261							
QC1201141851	MB										
Carbon-14			U	-0.157	pCi/g					07/29/06	13:08
	Uncert:			+/-0.123							
	TPU:			+/-0.123							
QC1201141853	167556029	MS									
Carbon-14	15.6	U	-0.049	14.8	pCi/g		95	(75%-125%)		07/29/06	15:10
	Uncert:		+/-0.124	+/-0.514							
	TPU:		+/-0.124	+/-0.564							
Batch	556697										
QC1201155544	167555017	DUP									
Nickel-63		U	-2.07	U	-4.18	pCi/g	0	(0% - 100%)	MXP1	08/14/06	10:13

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**QC Summary**

Workorder: 167556

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Parname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>										
Batch	556697									
		Uncert:	+/-6.24							+/-5.43
		TPU:	+/-6.24							+/-5.43
QC1201155546	LCS									
Nickel-63	512				pCi/g	90	(75%-125%)		08/14/06	11:16
		Uncert:								+/-15.9
		TPU:								+/-21.7
QC1201155543	MB									
Nickel-63			U		pCi/g				08/14/06	09:41
		Uncert:								+/-6.25
		TPU:								+/-6.25
QC1201155545	167555017	MS								
Nickel-63	551	U	-2.07		pCi/g	90	(75%-125%)		08/14/06	10:44
		Uncert:	+/-6.24							+/-17.2
		TPU:	+/-6.24							+/-23.7

Notes:

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 167556

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<u>Parmname</u>	<u>NOM</u>	<u>Sample Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
-----------------	------------	--------------------	-----------	--------------	-------------	-------------	--------------	--------------	-------------	-------------

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

## Table of Contents

<b>General Narrative</b> .....	<b>1</b>
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# **General Narrative**

**CASE NARRATIVE**  
**For**  
**CONNECTICUT YANKEE**  
**RE: Soil**  
**PO# 002332**  
**Work Order: 166655**  
**SDG: MSR #06-0968**

**July 21, 2006**

**Laboratory Identification:**

General Engineering Laboratories, LLC

**Mailing Address:**

P.O. Box 30712  
Charleston, South Carolina 29417

**Express Mail Delivery and Shipping Address:**

2040 Savage Road  
Charleston, South Carolina 29407

**Telephone Number:**

(843) 556-8171

**Summary:**

**Sample receipt**

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on July 7, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<b><u>Sample ID</u></b>	<b><u>Client Sample ID</u></b>
166655001	9106-0015-017A
166655002	9106-0015-017B
166655003	9106-0015-017C
166655004	9106-0015-017D

**Items of Note:**

There are no items of note.

**Case Narrative:**

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

**Analytical Request:**

Four soil samples were analyzed for FSSGAM and Sr-90.

**Internal Chain of Custody:**

Custody was maintained for the sample(s).

**Data Package:**

The enclosed data package contains the following sections: Case Narrative, Chain of Custody and Supporting Documentation and all analytical fractions.

I certify that this data package 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.



Cheryl Jones  
Project Manager

**Chain of Custody  
And  
Supporting  
Documentation**



**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00449

166655/-

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only	
Contact Name & Phone: Jack McCarthy 860-267-3924							FSSGAM	FSSALL	Sr-90	Ni-63	Comments	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones												
Priority: <input checked="" type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.												
Sample Designation			Media Code	Sample Type Code	Container Size- & Type Code							
9106-0015-017A	6-28-06	16:55	SE	C	BP	X		X				
9106-0015-017B	6-28-06	17:09	SE	C	BP	X		X				
9106-0015-017C	6-28-06	17:21	SE	C	BP	X		X				
9106-0015-017D	6-28-06	16:41	SE	C	BP	X		X				
NOTES: PO #: 002332 MSR #: 06-0968 SSWP#NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												
1) Relinquished By <i>[Signature]</i> Date/Time 6/28/06 17:50						2) Received By <i>JAIME RICARTE</i> Date/Time 6-28-06/17:50						
3) Relinquished By <i>JAIME RICARTE</i> Date/Time 7-6-06/1400						4) Received By <i>[Signature]</i> Date/Time 7/7/06 900						
Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other										Bill of Lading # 7919 8876 4783		
Internal Container Temp _____ Deg C Custody Sealed? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Custody Seal Intact? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO												

5

Figure 1. Sample Check-in List

Date/Time Received: 7/7/06

SDG#: \_\_\_\_\_

Work Order Number: 166653/166655/166656

Shipping Container ID: 7919 8876 4782 - 23<sup>rd</sup> Chain of Custody #: 2006-00449  
7910 4024 2957 - 22<sup>nd</sup> 2006-00448  
7927 8782 3138 - 25<sup>th</sup> 2006-00451  
2006-00452

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 23<sup>rd</sup> - 22<sup>nd</sup> - 23<sup>rd</sup>
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: (1) 3, (2) 12, (3) 9
- 7. Sample holding times exceeded? Yes  No

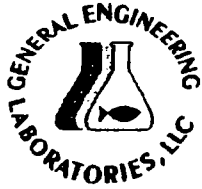
8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: David [Signature] Date: 7/7/06 0900

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCO/Work Order: <u>166653, 166655, 166656</u>
Date Received: <u>7/7/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant # ice bags blue ice dry ice none other (describe)
3 Chain of custody documents included with shipment?				
4 Sample containers intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8 Samples received within holding time?				Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?				
14 Air Bill, Tracking #'s, & Additional Comments				
<b>Suspected Hazard Information</b>	Non-Regulated	Regulated	High Level	<b>RSO RAD Receipt #</b> _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?				Maximum Counts Observed*: <u>18m 40</u>
B PCB Regulated?				Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.				Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification:				Initials: <u>[Signature]</u> Date: <u>7/7/06</u>

# **RADIOLOGICAL ANALYSIS**

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 166655**

**Method/Analysis Information**

**Product:** Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived  
**Analytical Method:** EML HASL 300, 4.5.2.3  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 546530  
**Prep Batch Number:** 546300

<b>Sample ID</b>	<b>Client ID</b>
166655001	9106-0015-017A
166655002	9106-0015-017B
166655003	9106-0015-017C
166655004	9106-0015-017D
1201131807	Method Blank (MB)
1201131808	166655001(9106-0015-017A) Sample Duplicate (DUP)
1201131809	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 11.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 166655001 (9106-0015-017A).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

The sample and the duplicate, 1201131808 (9106-0015-017A) and 166655001 (9106-0015-017A), did not meet the relative percent difference requirement for Ra-226, however they do meet the relative error ratio requirement with value of 1.94.

**Qualifier information**

<b>Qualifier</b>	<b>Reason</b>	<b>Analyte</b>	<b>Sample</b>
UI	Data rejected due to high peak width	Bismuth-212	166655002
UI	Data rejected due to low abundance	Cesium-134	166655003

**Method/Analysis Information**

**Product:** GFPC, Sr90, solid-ALL FSS  
**Analytical Method:** EPA 905.0 Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 547395  
**Prep Batch Number:** 546301  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 546300

<b>Sample ID</b>	<b>Client ID</b>
166655001	9106-0015-017A
166655002	9106-0015-017B
166655003	9106-0015-017C
166655004	9106-0015-017D
1201133604	Method Blank (MB)
1201133605	166653016(9106-0012-004F) Sample Duplicate (DUP)
1201133606	166653016(9106-0012-004F) Matrix Spike (MS)
1201133607	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 166653016 (9106-0012-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer/Date: \_\_\_\_\_

Handwritten signature of K. A. Ballantyne in black ink, with a date '7/26' written to the right of the signature.



# **SAMPLE DATA SUMMARY**

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-0968 GEL Work Order: 166655

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by \_\_\_\_\_

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017A  
Sample ID: 166655001  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 07 JUL 06  
Collector: Client  
Moisture: 21.8%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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### Rad Gamma Spec Analysis

*Gamma, Solid FSS GAM & ALL FSS 226 Ingrowth  
Waived*

Actinium 228		0.880	+/- 0.190	0.0701	+/- 0.190	0.148	pCi/g						
Americium 241	U	0.0144	+/- 0.0976	0.0798	+/- 0.0976	0.164	pCi/g		MJH1	07/17/06	1826	546530	1
Bismuth 212		0.586	+/- 0.272	0.126	+/- 0.272	0.266	pCi/g						
Bismuth 214		0.599	+/- 0.0901	0.0315	+/- 0.0901	0.066	pCi/g						
Cesium 134	U	0.0267	+/- 0.0293	0.0214	+/- 0.0293	0.0449	pCi/g						
Cesium 137		0.365	+/- 0.050	0.0181	+/- 0.050	0.038	pCi/g						
Cobalt 60		1.02	+/- 0.0748	0.0175	+/- 0.0748	0.038	pCi/g						
Europium 152	U	0.0287	+/- 0.0546	0.0456	+/- 0.0546	0.0946	pCi/g						
Europium 154	U	0.0179	+/- 0.0614	0.0526	+/- 0.0614	0.113	pCi/g						
Europium 155	U	0.0449	+/- 0.0829	0.0441	+/- 0.0829	0.0908	pCi/g						
Lead 212		0.818	+/- 0.0599	0.0252	+/- 0.0599	0.052	pCi/g						
Lead 214		0.731	+/- 0.087	0.0298	+/- 0.087	0.062	pCi/g						
Manganese 54	U	0.0186	+/- 0.0224	0.0194	+/- 0.0224	0.0406	pCi/g						
Niobium 94	U	0.0138	+/- 0.0188	0.0163	+/- 0.0188	0.0342	pCi/g						
Potassium 40		13.7	+/- 0.845	0.155	+/- 0.845	0.339	pCi/g						
Radium 226		0.599	+/- 0.0901	0.0315	+/- 0.0901	0.066	pCi/g						
Silver 108m	U	0.00949	+/- 0.0173	0.0153	+/- 0.0173	0.0318	pCi/g						
Thallium 208		0.265	+/- 0.0477	0.017	+/- 0.0477	0.0356	pCi/g						

### Rad Gas Flow Proportional Counting

*GFPC, Sr90, solid ALL FSS*

Strontium 90	U	0.0108	+/- 0.00917	0.00818	+/- 0.00918	0.0171	pCi/g		BXF1	07/14/06	2255	547395	2
--------------	---	--------	-------------	---------	-------------	--------	-------	--	------	----------	------	--------	---

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	07/09/06	1715	546300

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017A  
 Sample ID: 166655001

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery		GFPC, Sr90, solid	ALL FSS		68		(25% 125%)					

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017B  
Sample ID: 166655002  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 07 JUL 06  
Collector: Client  
Moisture: 27.1%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.747	+/- 0.273	0.096	+/- 0.273	0.192	pCi/g		MJH1	07/17/06	1847	546530	1
Americium 241	U	0.0467	+/- 0.101	0.0738	+/- 0.101	0.148	pCi/g						
Bismuth 212	UI	0.00	+/- 0.458	0.194	+/- 0.458	0.388	pCi/g						
Bismuth 214		0.726	+/- 0.124	0.042	+/- 0.124	0.084	pCi/g						
Cesium 134	U	0.0606	+/- 0.0415	0.0319	+/- 0.0415	0.0637	pCi/g						
Cesium 137		0.192	+/- 0.057	0.0269	+/- 0.057	0.0537	pCi/g						
Cobalt 60		0.357	+/- 0.0806	0.0313	+/- 0.0806	0.0626	pCi/g						
Europium 152	U	0.0185	+/- 0.107	0.0685	+/- 0.107	0.137	pCi/g						
Europium 154	U	0.00443	+/- 0.102	0.0838	+/- 0.102	0.168	pCi/g						
Europium 155	U	0.00816	+/- 0.0781	0.0634	+/- 0.0781	0.127	pCi/g						
Lead 212		0.818	+/- 0.102	0.0367	+/- 0.102	0.0734	pCi/g						
Lead 214		0.756	+/- 0.121	0.046	+/- 0.121	0.0919	pCi/g						
Manganese 54	U	0.0425	+/- 0.0386	0.0252	+/- 0.0386	0.0504	pCi/g						
Niobium 94	U	0.0111	+/- 0.0275	0.0226	+/- 0.0275	0.0451	pCi/g						
Potassium 40		12.8	+/- 1.41	0.216	+/- 1.41	0.431	pCi/g						
Radium 226		0.726	+/- 0.124	0.042	+/- 0.124	0.084	pCi/g						
Silver 108m	U	0.0101	+/- 0.0278	0.0235	+/- 0.0278	0.0469	pCi/g						
Thallium 208		0.309	+/- 0.067	0.0212	+/- 0.067	0.0424	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00332	+/- 0.0102	0.00839	+/- 0.0102	0.0175	pCi/g		BXF1	07/14/06	2255	547395	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	07/09/06	1715	546300

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017B  
Sample ID: 166655002

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			66		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017C  
Sample ID: 166655003  
Matrix: SE  
Collect Date: 28 JUN 06  
Receive Date: 07 JUL 06  
Collector: Client  
Moisture: 28.2%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium 228		0.651	+/- 0.218	0.101	+/- 0.218	0.201	pCi/g		MJH1	07/17/06	1849	546530	1
Americium 241	U	0.0671	+/- 0.122	0.0913	+/- 0.122	0.182	pCi/g						
Bismuth 212		0.903	+/- 0.350	0.205	+/- 0.350	0.409	pCi/g						
Bismuth 214		0.567	+/- 0.142	0.0456	+/- 0.142	0.0911	pCi/g						
Cesium 134	UI	0.00	+/- 0.0758	0.0328	+/- 0.0758	0.0656	pCi/g						
Cesium 137		0.195	+/- 0.0465	0.0248	+/- 0.0465	0.0496	pCi/g						
Cobalt 60		0.245	+/- 0.0599	0.0122	+/- 0.0599	0.0243	pCi/g						
Europium 152	U	0.0437	+/- 0.0885	0.0616	+/- 0.0885	0.123	pCi/g						
Europium 154	U	0.0373	+/- 0.0952	0.075	+/- 0.0952	0.150	pCi/g						
Europium 155	U	0.0405	+/- 0.0812	0.0682	+/- 0.0812	0.136	pCi/g						
Lead 212		0.627	+/- 0.0977	0.0356	+/- 0.0977	0.0712	pCi/g						
Lead 214		0.653	+/- 0.142	0.0467	+/- 0.142	0.0932	pCi/g						
Manganese 54	U	0.00607	+/- 0.0318	0.0265	+/- 0.0318	0.0529	pCi/g						
Niobium 94	U	0.012	+/- 0.0311	0.0261	+/- 0.0311	0.0522	pCi/g						
Potassium 40		11.1	+/- 1.28	0.279	+/- 1.28	0.559	pCi/g						
Radium 226		0.567	+/- 0.142	0.0456	+/- 0.142	0.0911	pCi/g						
Silver 108m	U	0.0232	+/- 0.0269	0.0236	+/- 0.0269	0.0473	pCi/g						
Thallium 208		0.240	+/- 0.0661	0.0237	+/- 0.0661	0.0473	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00484	+/- 0.00887	0.00724	+/- 0.00887	0.0151	pCi/g		BXF1	07/14/06	2256	547395	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	07/09/06	1715	546300

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017C  
Sample ID: 166655003

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			80		(25% 125%)					

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.



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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017D  
 Sample ID: 166655004  
 Matrix: SE  
 Collect Date: 28 JUN 06  
 Receive Date: 07 JUL 06  
 Collector: Client  
 Moisture: 19.5%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid FSS GAM &amp; ALL FSS 226 Ingrowth Waived</i>													
Actinium 228		0.566	+/- 0.242	0.103	+/- 0.242	0.220	pCi/g		MJH1	07/17/06	1854	546530	1
Americium 241	U	0.0677	+/- 0.107	0.0878	+/- 0.107	0.182	pCi/g						
Bismuth 212		0.686	+/- 0.349	0.195	+/- 0.349	0.417	pCi/g						
Bismuth 214		0.582	+/- 0.125	0.0395	+/- 0.125	0.0849	pCi/g						
Cesium 134	U	0.0273	+/- 0.0482	0.030	+/- 0.0482	0.064	pCi/g						
Cesium 137		0.313	+/- 0.064	0.0255	+/- 0.064	0.0544	pCi/g						
Cobalt 60		0.895	+/- 0.107	0.0205	+/- 0.107	0.0466	pCi/g						
Europium 152	U	0.0387	+/- 0.0717	0.0607	+/- 0.0717	0.128	pCi/g						
Europium 154	U	0.0601	+/- 0.0784	0.0729	+/- 0.0784	0.161	pCi/g						
Europium 155	U	0.0863	+/- 0.0665	0.0608	+/- 0.0665	0.126	pCi/g						
Lead 212		0.804	+/- 0.0801	0.0309	+/- 0.0801	0.0648	pCi/g						
Lead 214		0.709	+/- 0.124	0.0385	+/- 0.124	0.0817	pCi/g						
Manganese 54	U	0.00366	+/- 0.0295	0.0247	+/- 0.0295	0.0533	pCi/g						
Niobium 94	U	0.01	+/- 0.0236	0.019	+/- 0.0236	0.0411	pCi/g						
Potassium 40		12.2	+/- 1.12	0.185	+/- 1.12	0.427	pCi/g						
Radium 226		0.582	+/- 0.125	0.0395	+/- 0.125	0.0849	pCi/g						
Silver 108m	U	0.00728	+/- 0.0225	0.0199	+/- 0.0225	0.0423	pCi/g						
Thallium 208		0.228	+/- 0.0512	0.0214	+/- 0.0512	0.0459	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00367	+/- 0.00821	0.00707	+/- 0.00821	0.0148	pCi/g		BXF1	07/14/06	2256	547395	2

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	07/09/06	1715	546300

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: July 21, 2006

Client Sample ID: 9106 0015 017D  
Sample ID: 166655004

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Surrogate/Tracer recovery</b>	<b>Test</b>				<b>Recovery%</b>		<b>Acceptable Limits</b>					
Carrier/Tracer Recovery	GFPC, Sr90, solid	ALL FSS			68		(25% 125%)					

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# QUALITY CONTROL DATA

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Report Date: July 21, 2006  
Page 1 of 5

Client : Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 166655

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch 546530									
QC1201131808 166655001 DUP									
Actinium-228		0.880	0.785	pCi/g	7		(0% - 100%)	MJH1	07/17/06 19:00
	Uncert:	+/-0.190	+/-0.261						
	TPU:	+/-0.190	+/-0.261						
Americium-241	U	0.0144	U 0.0531	pCi/g	44		(0% - 100%)		
	Uncert:	+/-0.0976	+/-0.0519						
	TPU:	+/-0.0976	+/-0.0519						
Bismuth-212		0.586	1.42	pCi/g	67*		(0% - 100%)		
	Uncert:	+/-0.272	+/-0.597						
	TPU:	+/-0.272	+/-0.597						
Bismuth-214		0.599	0.695	pCi/g	32		(0% - 100%)		
	Uncert:	+/-0.0901	+/-0.165						
	TPU:	+/-0.0901	+/-0.165						
Cesium-134	U	0.0267	U 0.035	pCi/g	24		(0% - 100%)		
	Uncert:	+/-0.0293	+/-0.0628						
	TPU:	+/-0.0293	+/-0.0628						
Cesium-137		0.365	0.359	pCi/g	1		(0% - 100%)		
	Uncert:	+/-0.050	+/-0.0764						
	TPU:	+/-0.050	+/-0.0764						
Cobalt-60		1.02	0.828	pCi/g	20		(0% - 20%)		
	Uncert:	+/-0.0748	+/-0.132						
	TPU:	+/-0.0748	+/-0.132						
Europium-152	U	0.0287	U 0.0537	pCi/g	56		(0% - 100%)		
	Uncert:	+/-0.0546	+/-0.0862						
	TPU:	+/-0.0546	+/-0.0862						
Europium-154	U	0.0179	U 0.127	pCi/g	361		(0% - 100%)		
	Uncert:	+/-0.0614	+/-0.129						
	TPU:	+/-0.0614	+/-0.129						
Europium-155	U	0.0449	U 0.055	pCi/g	24		(0% - 100%)		
	Uncert:	+/-0.0829	+/-0.109						
	TPU:	+/-0.0829	+/-0.109						
Lead-212		0.818	0.756	pCi/g	6		(0% - 20%)		
	Uncert:	+/-0.0599	+/-0.0927						
	TPU:	+/-0.0599	+/-0.0927						
Lead-214		0.731	0.694	pCi/g	4		(0% - 20%)		
	Uncert:	+/-0.087	+/-0.121						
	TPU:	+/-0.087	+/-0.121						
Manganese-54	U	0.0186	U 0.0308	pCi/g	49		(0% - 100%)		
	Uncert:	+/-0.0224	+/-0.0506						
	TPU:	+/-0.0224	+/-0.0506						
Niobium-94	U	0.0138	U 0.00511	pCi/g	15		(0% - 100%)		
	Uncert:	+/-0.0188	+/-0.0378						
	TPU:	+/-0.0188	+/-0.0378						

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 166655

Page 2 of 5

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	546530										
Potassium-40		13.7		12.6	pCi/g	5		(0% - 20%)			
	Uncert:	+/-0.845		+/-1.23							
	TPU:	+/-0.845		+/-1.23							
Radium-226		0.599		0.695	pCi/g	32		(0% - 100%)			
	Uncert:	+/-0.0901		+/-0.165							
	TPU:	+/-0.0901		+/-0.165							
Silver-108m	U	0.00949	U	0.00566	pCi/g	71		(0% - 100%)			
	Uncert:	+/-0.0173		+/-0.0494							
	TPU:	+/-0.0173		+/-0.0494							
Thallium-208		0.265		0.271	pCi/g	6		(0% - 100%)			
	Uncert:	+/-0.0477		+/-0.0726							
	TPU:	+/-0.0477		+/-0.0726							
QC1201131809	LCS										
Actinium-228			U	0.160	pCi/g					07/17/06	19:01
	Uncert:			+/-0.545							
	TPU:			+/-0.545							
Americium-241	23.4			24.4	pCi/g		104	(75%-125%)			
	Uncert:			+/-0.599							
	TPU:			+/-0.599							
Bismuth-212			U	-0.135	pCi/g						
	Uncert:			+/-1.00							
	TPU:			+/-1.00							
Bismuth-214			U	-0.106	pCi/g						
	Uncert:			+/-0.219							
	TPU:			+/-0.219							
Cesium-134			U	-0.0105	pCi/g						
	Uncert:			+/-0.149							
	TPU:			+/-0.149							
Cesium-137	9.61			10.8	pCi/g		112	(75%-125%)			
	Uncert:			+/-0.468							
	TPU:			+/-0.468							
Cobalt-60	14.8			15.5	pCi/g		105	(75%-125%)			
	Uncert:			+/-0.660							
	TPU:			+/-0.660							
Europium-152			U	0.0894	pCi/g						
	Uncert:			+/-0.281							
	TPU:			+/-0.281							
Europium-154			U	0.0901	pCi/g						
	Uncert:			+/-0.291							
	TPU:			+/-0.291							
Europium-155			U	0.0661	pCi/g						
	Uncert:			+/-0.236							
	TPU:			+/-0.236							
Lead-212			U	0.00863	pCi/g						
	Uncert:			+/-0.144							
	TPU:			+/-0.144							
Lead-214			U	-0.0928	pCi/g						
	Uncert:			+/-0.197							

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 166655

Page 3 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>										
Batch	546530									
Manganese-54	TPU:		+/-0.197							
	Uncert:	U	-0.0301	pCi/g						
	TPU:		+/-0.142							
Niobium-94	TPU:	U	-0.105	pCi/g						
	Uncert:		+/-0.119							
	TPU:		+/-0.119							
Potassium-40	TPU:	U	0.577	pCi/g						
	Uncert:		+/-1.17							
	TPU:		+/-1.17							
Radium-226	TPU:	U	-0.106	pCi/g			(75%-125%)			
	Uncert:		+/-0.219							
	TPU:		+/-0.219							
Silver-108m	TPU:	U	-0.0449	pCi/g						
	Uncert:		+/-0.101							
	TPU:		+/-0.101							
Thallium-208	TPU:	U	-0.0572	pCi/g						
	Uncert:		+/-0.118							
	TPU:		+/-0.118							
QC1201131807 MB										
Actinium-228	TPU:	U	0.0538	pCi/g					07/17/06	18:57
	Uncert:		+/-0.0733							
	TPU:		+/-0.0733							
Americium-241	TPU:	U	0.0126	pCi/g						
	Uncert:		+/-0.0946							
	TPU:		+/-0.0946							
Bismuth-212	TPU:	U	-0.0364	pCi/g						
	Uncert:		+/-0.125							
	TPU:		+/-0.125							
Bismuth-214	TPU:	U	0.00552	pCi/g						
	Uncert:		+/-0.0416							
	TPU:		+/-0.0416							
Cesium-134	TPU:	U	0.00875	pCi/g						
	Uncert:		+/-0.0182							
	TPU:		+/-0.0182							
Cesium-137	TPU:	U	-0.000566	pCi/g						
	Uncert:		+/-0.0173							
	TPU:		+/-0.0173							
Cobalt-60	TPU:	U	-0.015	pCi/g						
	Uncert:		+/-0.0194							
	TPU:		+/-0.0194							
Europium-152	TPU:	U	0.0584	pCi/g						
	Uncert:		+/-0.053							
	TPU:		+/-0.053							
Europium-154	TPU:	U	0.0222	pCi/g						
	Uncert:		+/-0.0583							
	TPU:		+/-0.0583							
Europium-155	TPU:	U	-0.0079	pCi/g						

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 166655

Page 4 of 5

Parname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>										
Batch	546530									
Lead-212	Uncert:		+/-0.0403							
	TPU:		+/-0.0403							
		U	0.0336		pCi/g					
Lead-214	Uncert:		+/-0.0283							
	TPU:		+/-0.0283							
		U	0.0301		pCi/g					
Manganese-54	Uncert:		+/-0.0341							
	TPU:		+/-0.0341							
		U	0.0139		pCi/g					
Niobium-94	Uncert:		+/-0.0175							
	TPU:		+/-0.0175							
		U	-0.0065		pCi/g					
Potassium-40	Uncert:		+/-0.0171							
	TPU:		+/-0.0171							
		U	0.122		pCi/g					
Radium-226	Uncert:		+/-0.188							
	TPU:		+/-0.188							
		U	0.00552		pCi/g					
Silver-108m	Uncert:		+/-0.0416							
	TPU:		+/-0.0416							
		U	-0.00533		pCi/g					
Thallium-208	Uncert:		+/-0.0176							
	TPU:		+/-0.0176							
		U	0.000666		pCi/g					
Rad Gas Flow	Uncert:		+/-0.0172							
	TPU:		+/-0.0172							
		U								
Batch	547395									
QC1201133605	166653016	DUP								
Strontium-90		U	-0.00399	U	-0.00417					
	Uncert:		+/-0.0104		+/-0.00812					
	TPU:		+/-0.0104		+/-0.00812					
QC1201133607	LCS									
Strontium-90	1.50				1.45					
	Uncert:				+/-0.104		97 (75%-125%)		07/14/06	22:56
	TPU:				+/-0.110					
QC1201133604	MB									
Strontium-90		U	-0.00607							07/14/06 22:56
	Uncert:		+/-0.0062							
	TPU:		+/-0.0062							
QC1201133606	166653016	MS								
Strontium-90	1.52	U	-0.00399		1.24					
	Uncert:		+/-0.0104		+/-0.0934		81 (75%-125%)		07/14/06	22:55
	TPU:		+/-0.0104		+/-0.0986					

Notes:  
 The Qualifiers in this report are defined as follows:

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 166655

Page 5 of 5

Parname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
*	A quality control analyte recovery is outside of specified acceptance criteria									
<	Result is less than value reported									
>	Result is greater than value reported									
A	The TIC is a suspected aldol-condensation product									
B	Target analyte was detected in the associated blank									
BD	Results are either below the MDC or tracer recovery is low									
C	Analyte has been confirmed by GC/MS analysis									
D	Results are reported from a diluted aliquot of the sample									
H	Analytical holding time was exceeded									
J	Value is estimated									
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more									
R	Sample results are rejected									
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.									
UI	Gamma Spectroscopy--Uncertain identification									
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y	QC Samples were not spiked with this compound									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL									
h	Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

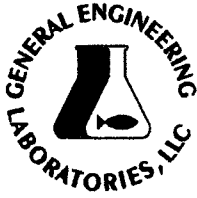
\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





**GENERAL ENGINEERING LABORATORIES, LLC**  
a Member of THE GEL GROUP, INC.  
*Meeting Today's Needs with a Vision for Tomorrow*

October 31, 2006

Mr. Jack McCarthy  
Connecticut Yankee Atomic Power  
362 Injun Hollow Rd  
East Hampton, Connecticut 06424

Re: Soils PO# 002332  
Work Order: 174791  
SDG: MSR#06-0730

Dear Mr. McCarthy:

General Engineering Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on May 24, 2006. This data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4243.

Sincerely,

Cheryl Jones  
Project Manager

Purchase Order: 002332  
Chain of Custody: 2006-00362  
Enclosures

**Connecticut Yankee Atomic Power Co.**  
**Soils PO# 002332**  
**Work Order: 174791**  
**SDG: MSR#06-0730**

<b><u>Laboratory ID</u></b>	<b><u>Client ID</u></b>
174791001	9106-0007-017F

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# **General Narrative**

**General Narrative  
for  
Connecticut Yankee Atomic Power Co.  
Work Order: 174791  
SDG: MSR#06-0730**

**October 31, 2006**

**Laboratory Identification:**

General Engineering Laboratories, LLC  
2040 Savage Road  
Charleston, South Carolina 29407  
(843) 556-8171

**Summary**

**Sample receipt**

The sample arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on May 24, 2006 for analysis. Shipping container temperature was checked, documented, and within specifications. The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

**Sample Identification** The laboratory received the following sample:

<b><u>Laboratory Identification</u></b>	<b><u>Sample Description</u></b>
174791001	9106-0007-017F

**Items of Note**

Dale Roberts requested via email on 10/24/06, to analyze this sample for FSSALL minus gamma and Sr-90.

**Case Narrative**

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

**Analytical Request**

One soil sample was reanalyzed for FSSALL, minus gamma and Sr-90. See attached email.

**Data Package**

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, Data Review Qualifier Definitions, and data from the following fractions: Radiochemistry.

I certify that this data package 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.



Cheryl Jones  
Project Manager

**List of current GEL Certifications as of 31 October 2006**

<b>State</b>	<b>Certification</b>
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

**Chain of Custody  
and  
Supporting  
Documentation**



**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00362

163626%

174791% Relog

Project Name: Haddam Neck Decommissioning						Analyses Requested			Date/Time		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM			Comment		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones						FSSALL					
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.						Sr-90					
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL	Sr-90			Comment, Preservation
9106-0007-016F	5/10/06	14:54	SE	C	BP	X		X			Transferred from COC 2006-00343
9106-0007-017F	5/11/06	10:39	SE	C	BP	X		X			Transferred from COC 2006-00345
9106-0007-001F	5/11/06	09:43	SE	C	BP		X				Transferred from COC 2006-00345
9106-0007-002F	5/08/06	13:27	SE	C	BP		X				Transferred from COC 2006-00329
9106-0007-003F	5/08/06	13:53	SE	C	BP	X		X			Transferred from COC 2006-00329
9106-0007-004F	5/08/06	14:13	SE	C	BP	X		X			Transferred from COC 2006-00329
9106-0007-004FS	5/08/06	14:13	SE	C	BP	X		X			Transferred from COC 2006-00329
9106-0007-005F	5/08/06	14:32	SE	C	BP	X		X			Transferred from COC 2006-00329
9106-0007-006F	5/08/06	14:52	SE	C	BP	X		X			Transferred from COC 2006-00329
NOTES: PO #: 002332 MSR #: 06-0730 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											
Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other											
1) Relinquished By <i>[Signature]</i>			Date/Time 5/23/06 085			2) Received By <i>[Signature]</i>			Date/Time 5/24/06 0930		
3) Relinquished By			Date/Time			4) Received By			Date/Time		
Bill of Lading # 79210573 5432											

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00363

1636261

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested				Comments			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90					
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.													
Sample Designation	Date	Time	Comment, Preservation										
9106-0007-007F	5/08/06	15:11	SE	C	BP	X			X		Transferred from COC 2006-00329		
9106-0007-008F	5/09/06	10:39	SE	C	BP	X			X		Transferred from COC 2006-00334		
9106-0007-011F	5/09/06	09:43	SE	C	BP	X			X		Transferred from COC 2006-00334		
9106-0007-012F	5/09/06	13:27	SE	C	BP	X			X		Transferred from COC 2006-00334		
9106-0007-013F	5/09/06	13:53	SE	C	BP	X			X		Transferred from COC 2006-00334		
9106-0007-013FS	5/09/06	14:13	SE	C	BP	X			X		Transferred from COC 2006-00334		
9106-0007-014F	5/09/06	14:13	SE	C	BP	X			X		Transferred from COC 2006-00334		
9106-0007-015F	5/16/06	07:56	SE	C	BP	X			X		Transferred from COC 2006-00353		
NOTES: PO #: 002332 MSR #: 06-0730 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA CD 5/21/06													
1) Relinquished By <i>Carroll</i>			Date/Time 5-23-06 0815		2) Received By <i>R. Light</i>			Date/Time 5/24/06 0930		Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other			
3) Relinquished By			Date/Time		4) Received By			Date/Time		Bill of Lading # 7921 0573 5443			

7

**Subject:** 9106-0007-017F, FSSALL request  
**From:** "Dale Randall" <randall@cyapco.com>  
**Date:** Tue, 24 Oct 2006 14:02:27 -0400  
**To:** "Cheryl Jones" <cj@gel.com>  
**CC:** "Arthur L. Hammond" <Hammond@CYAPCO.com>, "John McCarthy" <McCarthy@CYAPCO.com>

Cheryl:

We need sample 9106-0007-017F, initially sent as part of MSR#06-0730, to be analysed to the FSSALL protocol. It has already been measured for FSSGAM and Sr-90. Once you have had an opportunity to verify that you have enough sample aliquot and can estimate the turn around time (TAT) please call or e-mail me at your earliest convenience.

Thank You,

Dale

(860) 267-3133



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn Yankee</u>	SDG/ARCO/Work Order: <u>110310216</u>
Date Received: <u>5/24/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): 
Received By: <u>(Signature)</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		/		Circle Coolant # ice bags blue ice dry ice <u>none</u> other (describe)  <u>19°C</u>
3 Chain of custody documents included with shipment?	/			
4 Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/	
8 Samples received within holding time?	/			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11 Number of containers received match number indicated on COC?	/			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	/			

14 Air Bill ,Tracking #'s, & Additional Comments	<u>7921 0073 5432</u>
--	-----------------------

Suspected Hazard Information	Non-Regulated	Regulated	High Level	Comments
A Radiological Classification?	X	/		RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	X			Maximum Counts Observed*: <u>cpm 60</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: \_\_\_\_\_ Initials CS Date: 5/24/06

Figure 1. Sample Check-in List

Date/Time Received: 5/24/06 0930

SDG#: MSR# 06-0730

Work Order Number: 163626

Shipping Container ID: 7921 09735432 Chain of Custody #: 2006-00300

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature 19°C
5. Vermiculite/packing materials is: Wet  Dry  NA
6. Number of samples in shipping container: 9
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: [Signature] Date: 5/24/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

# **Data Review Qualifier Definitions**

## Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

# **RADIOLOGICAL ANALYSIS**



**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 174791**

**Method/Analysis Information**

**Product:** Alphaspec Am241, Cm, Solid ALL FSS  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 582798  
**Prep Batch Number:** 582531  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 582530

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215730	Method Blank (MB)
1201215731	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215732	174791001(9106-0007-017F) Matrix Spike (MS)
1201215733	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Alphaspec Pu, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Pu-11-RC Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 582799  
**Prep Batch Number:** 582531  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 582530

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215734	Method Blank (MB)
1201215735	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215736	174791001(9106-0007-017F) Matrix Spike (MS)
1201215737	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples 1201215734 (MB) and 174791001 (9106-0007-017F) were recounted due to detector error.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Pu241, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	582800
Prep Batch Number:	582531
Dry Soil Prep GL-RAD-A-021 Batch Number:	582530

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215738	Method Blank (MB)
1201215739	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215740	174791001(9106-0007-017F) Matrix Spike (MS)
1201215741	Laboratory Control Sample (LCS)

### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

#### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

### **Quality Control (QC) Information:**

#### **Blank Information**

The blank volume is representative of the sample volume in this batch.

#### **Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

#### **QC Information**

All of the QC samples met the required acceptance limits.

### **Technical Information:**

#### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

#### **Preparation Information**

All preparation criteria have been met for these analyses.

#### **Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

### **Miscellaneous Information:**

#### **NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this

SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 582788

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215687	Method Blank (MB)
1201215688	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215689	174791001(9106-0007-017F) Matrix Spike (MS)
1201215690	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volumes in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples were recounted due to a suspected blank false positive.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	582786
Prep Batch Number:	582531
Dry Soil Prep GL-RAD-A-021 Batch Number:	582530

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215679	Method Blank (MB)
1201215680	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215681	174791001(9106-0007-017F) Matrix Spike (MS)
1201215682	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this



SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Ni63, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	582787
Prep Batch Number:	582531
Dry Soil Prep GL-RAD-A-021 Batch Number:	582530

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215683	Method Blank (MB)
1201215684	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215685	174791001(9106-0007-017F) Matrix Spike (MS)
1201215686	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS

Analytical Method: EPA 906.0 Modified

Analytical Batch Number: 582789

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215691	Method Blank (MB)
1201215692	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215693	174791001(9106-0007-017F) Matrix Spike (MS)
1201215694	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this

SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS

Analytical Method: EPA EERF C-01 Modified

Analytical Batch Number: 582790

<b>Sample ID</b>	<b>Client ID</b>
174791001	9106-0007-017F
1201215695	Method Blank (MB)
1201215696	174791001(9106-0007-017F) Sample Duplicate (DUP)
1201215697	174791001(9106-0007-017F) Matrix Spike (MS)
1201215698	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 174791001 (9106-0007-017F).



# **SAMPLE DATA SUMMARY**

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

**YANK001 Connecticut Yankee Atomic Power Co.**

**Client SDG: MSR#06-0730 GEL Work Order: 174791**

**The Qualifiers in this report are defined as follows:**

\* A quality control analyte recovery is outside of specified acceptance criteria

\*\* Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by \_\_\_\_\_

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: November 3, 2006

Client Sample ID:	9106 0007 017F	Project:	YANK01204
Sample ID:	174791001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	11 MAY 06		
Receive Date:	24 MAY 06		
Collector:	Client		
Moisture:	38.1%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.00318	+/- 0.0201	0.00	+/- 0.0201	0.0896	pCi/g		MXA	10/27/06	0938	582798	1
Curium 242	U	0.0163	+/- 0.137	0.061	+/- 0.137	0.306	pCi/g						
Curium 243/244	U	0.0591	+/- 0.0945	0.0302	+/- 0.0947	0.151	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0128	+/- 0.133	0.106	+/- 0.133	0.309	pCi/g		MXA	10/28/06	1032	582799	2
Plutonium 239/240	U	0.0469	+/- 0.129	0.0844	+/- 0.129	0.265	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	1.93	+/- 6.47	5.51	+/- 6.47	11.6	pCi/g		MXA	10/31/06	0217	582800	3
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	2.94	+/- 7.03	5.68	+/- 7.03	12.3	pCi/g		MXP1	10/26/06	2118	582789	4
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0304	+/- 0.120	0.0999	+/- 0.120	0.205	pCi/g		AXD2	10/28/06	0831	582790	5
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	7.05	+/- 34.5	26.2	+/- 34.5	55.0	pCi/g		MXP1	10/31/06	1634	582786	6
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	2.73	+/- 9.43	7.78	+/- 9.43	16.4	pCi/g		MXP1	11/02/06	0756	582787	7
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.120	+/- 0.236	0.194	+/- 0.236	0.404	pCi/g		KXR1	11/02/06	1009	582788	8

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	MXP2	10/24/06	1704	582530

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: November 3, 2006

Client Sample ID: 9106 0007 017F  
Sample ID: 174791001

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
3	DOE EML HASL	300, Pu	11 RC Modified									
4	EPA 906.0		Modified									
5	EPA EERF C	01	Modified									
6	DOE RESL Fe	1,	Modified									
7	DOE RESL Ni	1,	Modified									
8	DOE EML HASL	300, Tc	02 RC Modified									
9	DOE EML HASL	300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	85	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	91	(15% 125%)
Plutonium 241	Liquid Scint Pu241, Solid ALL FS	100	(25% 125%)
Iron 55	Liquid Scint Fe55, Solid ALL FS	54	(15% 125%)
Nickel 63	Liquid Scint Ni63, Solid ALL FS	84	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	84	(25% 125%)
Technetium 99	Liquid Scint Tc99, Solid ALL FS	75	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	75	(15% 125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL

**GENERAL ENGINEERING LABORATORIES, LLC**  
2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: November 3, 2006

Client Sample ID: 9106 0007 017F  
Sample ID: 174791001

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# QUALITY CONTROL DATA

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Report Date: November 3, 2006  
 Page 1 of 5

**Client :** Connecticut Yankee Atomic Power  
 362 Injun Hollow Rd  
  
**Contact:** East Hampton, Connecticut  
 Mr. Jack McCarthy  
  
**Workorder:** 174791

Parname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time		
<b>Rad Alpha Spec</b>											
Batch	582798										
QC1201215731	174791001	DUP									
Americium-241	U	0.00318	U	0.0674	pCi/g	182	(0% - 100%)	MXA1	10/27/06 09:38		
	Uncert:	+/-0.0201		+/-0.103							
	TPU:	+/-0.0201		+/-0.103							
Curium-242	U	-0.0163	U	0.0722	pCi/g	317	(0% - 100%)				
	Uncert:	+/-0.137		+/-0.142							
	TPU:	+/-0.137		+/-0.142							
Curium-243/244	U	0.0591	U	0.090	pCi/g	41	(0% - 100%)				
	Uncert:	+/-0.0945		+/-0.124							
	TPU:	+/-0.0947		+/-0.124							
QC1201215733	LCS										
Americium-241	13.5			11.7	pCi/g		87 (75%-125%)				
	Uncert:			+/-1.32							
	TPU:			+/-1.99							
Curium-242			U	0.00	pCi/g						
	Uncert:			+/-0.0764							
	TPU:			+/-0.0764							
Curium-243/244	16.3			15.5	pCi/g		95 (75%-125%)				
	Uncert:			+/-1.52							
	TPU:			+/-2.49							
QC1201215730	MB										
Americium-241			U	0.0124	pCi/g						
	Uncert:			+/-0.0448							
	TPU:			+/-0.0448							
Curium-242			U	0.00	pCi/g						
	Uncert:			+/-0.0827							
	TPU:			+/-0.0827							
Curium-243/244			U	-0.0201	pCi/g						
	Uncert:			+/-0.0868							
	TPU:			+/-0.0869							
QC1201215732	174791001	MS									
Americium-241	13.5	U	0.00318	13.2	pCi/g		98 (75%-125%)				
	Uncert:		+/-0.0201	+/-1.30							
	TPU:		+/-0.0201	+/-2.06							
Curium-242		U	-0.0163	-0.0163	pCi/g						
	Uncert:		+/-0.137	+/-0.137							
	TPU:		+/-0.137	+/-0.137							
Curium-243/244	16.6	U	0.0591	15.2	pCi/g		92 (75%-125%)				
	Uncert:		+/-0.0945	+/-1.40							
	TPU:		+/-0.0947	+/-2.32							
Batch	582799										
QC1201215735	174791001	DUP									
Plutonium-238	U	0.0128	U	-0.0132	pCi/g	13000	(0% - 100%)	MXA1	10/27/06 09:37		

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 174791

Page 2 of 5

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	582799										
Plutonium-239/240		Uncert:	+/-0.133								
		TPU:	+/-0.133								
	U		0.0469	U	0.0208	pCi/g	77	(0% - 100%)			
		Uncert:	+/-0.129								
		TPU:	+/-0.129								
QC1201215737	LCS										
Plutonium-238				U	0.0489	pCi/g		(75%-125%)		10/27/06	09:37
		Uncert:			+/-0.0966						
		TPU:			+/-0.0967						
Plutonium-239/240	12.5				10.1	pCi/g	81	(75%-125%)			
		Uncert:			+/-1.03						
		TPU:			+/-1.53						
QC1201215734	MB										
Plutonium-238				U	-0.0402	pCi/g				10/28/06	10:32
		Uncert:			+/-0.117						
		TPU:			+/-0.117						
Plutonium-239/240				U	-0.00717	pCi/g					
		Uncert:			+/-0.0798						
		TPU:			+/-0.0798						
QC1201215736	174791001	MS									
Plutonium-238		U	0.0128		0.0824	pCi/g		(75%-125%)		10/27/06	09:37
		Uncert:	+/-0.133		+/-0.0933						
		TPU:	+/-0.133		+/-0.0938						
Plutonium-239/240	12.5	U	0.0469		12.7	pCi/g	102	(75%-125%)			
		Uncert:	+/-0.129		+/-1.15						
		TPU:	+/-0.129		+/-1.84						
Batch	582800										
QC1201215739	174791001	DUP									
Plutonium-241		U	-1.93	U	-2.07	pCi/g	0	(0% - 100%)	MXA1	10/31/06	02:49
		Uncert:	+/-6.47		+/-6.94						
		TPU:	+/-6.47		+/-6.94						
QC1201215741	LCS										
Plutonium-241			144		134	pCi/g	93	(75%-125%)		10/31/06	03:21
		Uncert:			+/-12.2						
		TPU:			+/-17.8						
QC1201215738	MB										
Plutonium-241				U	-2.88	pCi/g				10/31/06	02:33
		Uncert:			+/-6.98						
		TPU:			+/-6.98						
QC1201215740	174791001	MS									
Plutonium-241		U	-1.93		131	pCi/g	90	(75%-125%)		10/31/06	03:05
		Uncert:	+/-6.47		+/-12.2						
		TPU:	+/-6.47		+/-17.5						
<b>Rad Liquid Scintillation</b>											
Batch	582786										
QC1201215680	174791001	DUP									
Iron-55		U	-7.05	U	-26.2	pCi/g	0	(0% - 100%)	MXP1	10/31/06	17:07
		Uncert:	+/-34.5		+/-29.4						
					+/-29.4						

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**QC Summary**

Workorder: 174791

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Parname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>										
Batch	582786									
QC1201215682	LCS	TPU: +/-34.5								
Iron-55	679		624	pCi/g		92	(75%-125%)		10/31/06	17:40
		Uncert: +/-48.6								
		TPU: +/-72.2								
QC1201215679	MB									
Iron-55		U	7.04	pCi/g					10/31/06	16:50
		Uncert: +/-28.0								
		TPU: +/-28.0								
QC1201215681	174791001 MS									
Iron-55	763	U	-7.05	pCi/g		89	(75%-125%)		10/31/06	17:23
		Uncert: +/-34.5								
		TPU: +/-34.5								
Batch	582787									
QC1201215684	174791001 DUP									
Nickel-63		U	2.73	U	5.54	pCi/g	0	(0% - 100%) MXP1	11/02/06	08:28
		Uncert: +/-9.43								
		TPU: +/-9.43								
QC1201215686	LCS									
Nickel-63	573		479	pCi/g		84	(75%-125%)		11/02/06	09:01
		Uncert: +/-24.2								
		TPU: +/-29.7								
QC1201215683	MB									
Nickel-63		U	-0.527	pCi/g					11/02/06	08:12
		Uncert: +/-9.21								
		TPU: +/-9.21								
QC1201215685	174791001 MS									
Nickel-63	581	U	2.73	pCi/g		78	(75%-125%)		11/02/06	08:45
		Uncert: +/-9.43								
		TPU: +/-9.43								
Batch	582788									
QC1201215688	174791001 DUP									
Technetium-99		U	0.120	U	0.198	pCi/g	0	(0% - 100%) KXR1	11/02/06	10:42
		Uncert: +/-0.236								
		TPU: +/-0.236								
QC1201215690	LCS									
Technetium-99	12.8		11.6	pCi/g		91	(75%-125%)		11/02/06	11:14
		Uncert: +/-0.496								
		TPU: +/-0.559								
QC1201215687	MB									
Technetium-99		U	0.0646	pCi/g					11/02/06	10:26
		Uncert: +/-0.215								
		TPU: +/-0.215								
QC1201215689	174791001 MS									
Technetium-99	12.8	U	0.120	pCi/g		88	(75%-125%)		11/02/06	10:58
		Uncert: +/-0.236								
		TPU: +/-0.236								
Batch	582789									
QC1201215692	174791001 DUP									

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**QC Summary**

Workorder: 174791

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	582789										
Tritium		U	2.94	U	2.89	pCi/g	0	(0% - 100%)	MXP1	10/26/06	21:50
		Uncert:	+/-7.03		+/-6.93						
		TPU:	+/-7.03		+/-6.93						
QC1201215694	LCS										
Tritium	57.1				56.6	pCi/g	99	(75%-125%)		10/26/06	22:22
		Uncert:			+/-10.2						
		TPU:			+/-10.3						
QC1201215691	MB										
Tritium				U	3.92	pCi/g				10/26/06	21:34
		Uncert:			+/-6.59						
		TPU:			+/-6.59						
QC1201215693	174791001	MS									
Tritium	66.9	U	2.94		62.5	pCi/g	94	(75%-125%)		10/26/06	22:06
		Uncert:	+/-7.03		+/-11.9						
		TPU:	+/-7.03		+/-11.9						
Batch	582790										
QC1201215696	174791001	DUP									
Carbon-14		U	0.0304	U	0.0477	pCi/g	0	(0% - 100%)	AXD2	10/28/06	10:05
		Uncert:	+/-0.120		+/-0.113						
		TPU:	+/-0.120		+/-0.113						
QC1201215698	LCS										
Carbon-14	6.70				6.44	pCi/g	96	(75%-125%)		10/28/06	11:40
		Uncert:			+/-0.228						
		TPU:			+/-0.249						
QC1201215695	MB										
Carbon-14				U	-0.0883	pCi/g				10/28/06	09:18
		Uncert:			+/-0.109						
		TPU:			+/-0.109						
QC1201215697	174791001	MS									
Carbon-14	12.8	U	0.0304		12.2	pCi/g	95	(75%-125%)		10/28/06	10:53
		Uncert:	+/-0.120		+/-0.433						
		TPU:	+/-0.120		+/-0.473						

Notes:

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
- Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more

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**QC Summary**

Workorder: 174791

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
N/A										
R		Sample results are rejected								
U		Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.								
UI		Gamma Spectroscopy--Uncertain identification								
X		Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier								
Y		QC Samples were not spiked with this compound								
^		RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL								
h		Preparation or preservation holding time was exceeded								

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**CASE NARRATIVE  
For  
CONNECTICUT YANKEE  
RE: Soil  
PO# 002332  
Work Order: 170683  
SDG: 170683**

**September 6, 2006**

**Laboratory Identification:**

General Engineering Laboratories, LLC

**Mailing Address:**

P.O. Box 30712  
Charleston, South Carolina 29417

**Express Mail Delivery and Shipping Address:**

2040 Savage Road  
Charleston, South Carolina 29407

**Telephone Number:**

(843) 556-8171

**Summary:**

**Sample receipt**

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on August 17, 2006, July 07, 2006, July 13, 2006, July 21, 2006 and June 21, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<b><u>Sample ID</u></b>	<b><u>Client Sample ID</u></b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683004	9106-0013-006F
170683005	9106-0013-005F
170683006	9106-0014-012F
170683007	9106-0014-033F
170683008	9106-0015-018F

GENERAL ENGINEERING LABORATORIES, LLC  
*a Member of THE GEL GROUP, INC.*  
P.O. Box 30712 • Charleston, SC 29417 • 2040 Savage Road (29407)  
Phone (843) 556-8171 • Fax (843) 766-1178 • www.gel.com

170683009 9106-0015-002F  
170683010 9106-0001-132F

**Items of Note:**

At the request of Dale Randall on August 31, 2006, the samples listed above were relogged for various analyses. A list of Sample ID's and requested tests follows.

**Case Narrative:**

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

**Analytical Request:**

Ten soil samples were analyzed for various analyses included in the FSSALL suite.

**Internal Chain of Custody:**

Custody was maintained for the sample(s).

**Data Package:**

The enclosed data package contains the following sections: Case Narrative, Chain of Custody and Supporting Documentation and all analytical fractions.

I certify that this data package 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.



Cheryl Jones  
Project Manager

Analysis request - 8/31/06

Done

To be done

Previous GEL ID	CY sample location IDs	FSS Gam	Sr-90	Ni-63	Am	Pu	Sr90	Pu241	Fe55	NI63	Tc99	H3	C14
165614006	9106-0011-018F	x		x	X	X	X	X	X		X	X	X
166653003	9106-0012-005F	x			X	X	X	X	X	X	X	X	X
166653010	9106-0012-014F	x			X	X	X	X	X	X	X	X	X
167555007	9106-0013-005F	x			X	X	X	X	X	X	X	X	X
167555001	9106-0013-006F	x			X	X	X	X	X	X	X	X	X
167014026	9106-0014-012F	x			X	X	X	X	X	X	X	X	X
167014042	9106-0014-033F	x			X	X	X	X	X	X	X	X	X
167556010	9106-0015-002F	x	x		X	X		X	X	X	X	X	X
167556007	9106-0015-018F	x	x		X	X		X	X	X	X	X	X
169489001	9106-0001-132F	x			X	X	X	X	X	X	X	X	X

RELOGGED AS 170683

**List of current GEL Certifications as of 06 September 2006**

<b>State</b>	<b>Certification</b>
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	N/A
Virginia	00151
Washington	C223

# **Chain of Custody And Supporting Documentation**

170683

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Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						Chain of Custody Form				No. 2006-00413				
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Comments			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Ni-63					Lab Use Only Comments: [REDACTED]	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Comment, Preservation		Lab Sample ID									
9106-0011-011F	5/17/06	08:15	SE	C	BP	X		X			Transferred from COC 2006-00356			
9106-0011-012F	5/17/06	08:41	SE	C	BP	X		X			Transferred from COC 2006-00356			
9106-0011-012FS	5/17/06	08:41	SE	C	BP	X		X			Transferred from COC 2006-00356			
9106-0011-014F	5/17/06	09:34	SE	C	BP	X		X			Transferred from COC 2006-00356			
9106-0011-015F	5/17/06	09:12	SE	C	BP	X		X			Transferred from COC 2006-00356			
9106-0011-018F	5/17/06	10:01	SE	C	BP	X		X			Transferred from COC 2006-00356			
9106-0011-002F	5/15/06	14:33	SE	C	BP	X		X			Transferred from COC 2006-00352			
9106-0011-003F	5/15/06	14:58	SE	C	BP		X				Transferred from COC 2006-00352			
NOTES: PO #: 002332 MSR #: 06-SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA ↓ 0877 per accompanying paperwork. CAJom 4/21/06										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Tamper Evident Date C Properly Sealed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
1) Relinquished By JAIME RICARTE			Date/Time 6-20-06/1100		2) Received By <i>AM</i>			Date/Time 4/21/06 0930		Bill of Lading # 7910 2328 7540				
3) Relinquished By			Date/Time		4) Received By			Date/Time						
5) Relinquished By			Date/Time		6) Received By			Date/Time						



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <b>CONN ATOMIC YANKEE</b>	SDG/ARCO/Work Order: <b>165614</b>
Date Received: <b>6-21-06</b>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>[Signature]</i>
Received By: <b>ACM</b>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		/		Circle Coolant # ice bags blue ice dry ice <del>other</del> other describe) <b>24°C</b>
3 Chain of custody documents included with shipment?	/			
4 Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/	
8 Samples received within holding time?	/			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?			/	Sample ID's affected: <b>TIME &amp; DATES WERE WIPE OFF</b>
11 Number of containers received match number indicated on COC?	/			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	/			
14 Air Bill ,Tracking #'s, & Additional Comments	<b>7910 2328 754D</b>			

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?		X		Maximum Counts Observed*: <b>CAM 60</b>
B PCB Regulated?	X			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	X			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification: _____				Initials: <i>[Signature]</i> Date: <b>6/21/06</b>

Figure 1. Sample Check-in List

Date/Time Received: 6-21-06 0930

SDG#: MSR# 06-0877

Work Order Number: 1656141

Shipping Container ID: 7910 2328 2540 Chain of Custody #: 2006-00413

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature 24°C
5. Vermiculite/packing materials is: Wet  Dry
6. Number of samples in shipping container: 8
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input checked="" type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: A. Muly Date: 6/21/06 0930

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00451

166653-1

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924											Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL					Comment, Preservation	Lab Sample ID	
9106-0012-002F	6/23/06	08:56	SE	C	BP	X						Transferred from COC 2006-00436	001	
9106-0012-003F	6/23/06	08:39	SE	C	BP	X						Transferred from COC 2006-00436	002	
9106-0012-004F	6/23/06	09:32	SE	C	BP		X					Transferred from COC 2006-00436	016	
9106-0012-005F	6/23/06	09:56	SE	C	BP	X						Transferred from COC 2006-00436	003	
9106-0012-006F	6/23/06	13:07	SE	C	BP	X						Transferred from COC 2006-00436	004	
9106-0012-010F	6/23/06	11:08	SE	C	BP		X					Transferred from COC 2006-00436	017	
9106-0012-013F	6/23/06	10:56	SE	C	BP	X						Transferred from COC 2006-00436	005	
9106-0012-013FS	6/23/06	10:56	SE	C	BP	X						Transferred from COC 2006-00436	006	
NOTES: PO #: 002332 MSR #: 06-0960 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: ___ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAIME RICARTE			Date/Time 7-6-06 / 1400			2) Received By <i>[Signature]</i>			Date/Time 7/7/06 900			Bill of Lading # 7919 8876 4783		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00452

*1666531*

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924											Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL					Comment, Preservation	Lab Sample ID	
9106-0012-007F	6/21/06	09:32	SE	C	BP	X						Transferred from COC # 2006-00433	<i>007</i>	
9106-0012-008F	6/21/06	09:00	SE	C	BP	X						Transferred from COC # 2006-00433	<i>008</i>	
9106-0012-012F	6/21/06	09:19	SE	C	BP	X						Transferred from COC # 2006-00433	<i>009</i>	
9106-0012-014F	6/21/06	10:05	SE	C	BP	X						Transferred from COC # 2006-00433	<i>010</i>	
9106-0012-011F	6/21/06	09:51	SE	C	BP	X						Transferred from COC # 2006-00433	<i>011</i>	
9106-0012-015F	6/21/06	14:24	SE	C	BP	X						Transferred from COC # 2006-00433	<i>012</i>	
9106-0012-009F	6/23/06	10:33	SE	C	BP	X						Transferred from COC # 2006-00436	<i>013</i>	
9106-0012-009FS	6/23/06	10:33	SE	C	BP	X						Transferred from COC # 2006-00436	<i>014</i>	
9106-0012-001F	6/23/06	09:18	SE	C	BP	X						Transferred from COC # 2006-00436	<i>015</i>	
NOTES: PO #: 002332 MSR #: 06-0967 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: _____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By <i>JAMIE RUADE</i>			Date/Time <i>7-6-06/1400</i>			2) Received By <i>Maria Santos</i>			Date/Time <i>7/7/06 900</i>			Bill of Lading # <i>7927 8782 3129</i>		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCOC/Work Order: <u>166653, 166655, 166656</u>
Date Received: <u>7/7/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?				Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant #:    ice bags    blue ice    dry ice    none    other describe)
3	Chain of custody documents included with shipment?				
4	Sample containers intact and sealed?				Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5	Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8	Samples received within holding time?				Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?				Sample ID's affected:
11	Number of containers received match number indicated on COC?				Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?				
14	Air Bill , Tracking #'s, & Additional Comments				

<b>Suspected Hazard Information</b>	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
<b>A</b> Radiological Classification?				Maximum Counts Observed*: <u>1800 40</u>
<b>B</b> PCB Regulated?				Comments:
<b>C</b> Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.				Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: \_\_\_\_\_ Initials [Signature] Date: 7/7/06

Figure 1. Sample Check-in List

Date/Time Received: 7/7/06

SDG#: \_\_\_\_\_

Work Order Number: 166653/166655/166656

Shipping Container ID: 7919 8876 4783 - 23°C Chain of Custody # 2006 - 00449  
7910 4024 2957 - 22°C 2006 - 00448  
7917 8782 3135 - 23°C 2006 - 00451  
2006 - 00452

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature 23°C - 22°C - 23°C
5. Vermiculite/packing materials is: Wet  Dry
6. Number of samples in shipping container: (1) 3 (2) 12 (3) 9
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: David [Signature] Date: 7/7/06 0900  
Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00434

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924							FSSGAM	FSSALL					Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code							Comment, Preservation		Lab Sample ID
9106-0013-006F	6/21/06	10:33	SE	C	BP	X								
9106-0013-003F	6/21/06	10:51	SE	C	BP	X								
9106-0013-002F	6/21/06	10:19	SE	C	BP	X								
9106-0013-002FS	6/21/06	10:19	SE	C	BP	X								
9106-0013-010F	6/21/06	13:56	SE	C	BP	X								
9106-0013-010FS	6/21/06	13:56	SE	C	BP	X								
9106-0013-005F	6/21/06	14:40	SE	C	BP	X								
9106-0013-011F	6/21/06	13:35	SE	C	BP	X								
NOTES: PO #: 002332 MSR #: 06-1036 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: 21 Deg. C Custody Sealed? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAME RIAPPE			Date/Time 7-20-06 / 1445			2) Received By K. Wright			Date/Time 7/21/06 0930					
3) Relinquished By			Date/Time			4) Received By			Date/Time			Bill of Lading # 7910-5711-1264		
5) Relinquished By			Date/Time			6) Received By			Date/Time					

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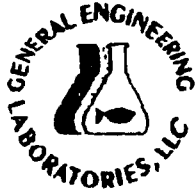
**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00444

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	FSSGAM	FSSALL						Comment, Preservation	Lab Sample ID			
9106-0013-007F	6-27-06	10:58	SE	C	BP	X								
9106-0013-014F	6-27-06	09:22	SE	C	BP	X								
9106-0013-015F	6-26-06	15:06	SE	C	BP	X					Transferred from COC 2006-00438			
9106-0013-001F	6-23-06	13:32	SE	C	BP	X					Transferred from COC 2006-00437			
9106-0013-004F	6-23-06	13:51	SE	C	BP		X				Transferred from COC 2006-00437			
9106-0013-009F	6-23-06	14:08	SE	C	BP		X				Transferred from COC 2006-00437			
9106-0013-013F	6-23-06	14:38	SE	C	BP	X					Transferred from COC 2006-00437			
9106-0013-008F	6-26-06	11:11	SE	C	BP	X					Transferred from COC 2006-00438			
9106-0013-012F	6-26-06	12:35	SE	C	BP	X					Transferred from COC 2006-00438			
NOTES: PO #: 002332 MSR #: 06-5036 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: 21 Deg. C Custody Sealed? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAMIE RICARTE			Date/Time 7-20-06/1445		2) Received By K. Wright			Date/Time 7/20/06 0930						
3) Relinquished By			Date/Time		4) Received By			Date/Time						
Bill of Lading #											7910 5711 1209			



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Yank.</u>	SDG/ARCO/Work Order: <u>167554, 167555, 167581</u>
Date Received: <u>7/21/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	/			Circle Coolant # ice bags blue ice dry ice <u>none</u> other (describe) <u>See Cont. Sheet</u>
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/	
8	Samples received within holding time?	/			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?			/	Sample ID's and containers affected: <u>See Cont. Sheet</u>
10	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11	Number of containers received match number indicated on COC?	/			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	/			
14	Air Bill, Tracking #'s, & Additional Comments				<u>See sheet</u>
	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	/			Maximum Counts Observed*: <u>cpm 40</u>
B	PCB Regulated?	/			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Hazard Class Shipped: UNF:
PM (or PMA) review of Hazard classification:		Initials		Date: <u>7/21/06</u>	





Figure 1. Sample Check-in List

Date/Time Received: 7/21/06 0930

SDG#: MSR#06-1035, MSR#06-1036, MSR#06-1037

Work Order Number: 167555/

Shipping Container ID: See cont. sheet Chain of Custody #: See cont. sheet

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No  N/A
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature See cont. sheet
5. Vermiculite/packing materials is: Wet  Dry  N/A
6. Number of samples in shipping container: See cont. sheet
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers):  
\_\_\_\_\_  
\_\_\_\_\_

Sample Custodian/Laboratory: K. Wright Date: 7/21/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00456

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924							FSSGAM	FSSALL	Comments:					
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code						Comment, Preservation	Lab Sample ID		
9106-0014-021F	6/15/06	10:50	SE	C	BP	X					Transferred from COC 2006-00407			
9106-0014-030F	6/15/06	11:20	SE	C	BP	X					Transferred from COC 2006-00407			
9106-0014-032F	6/15/06	09:31	SE	C	BP	X					Transferred from COC 2006-00407			
9106-0014-043F	6/16/06	08:45	SE	C	BP	X					Transferred from COC 2006-00409			
9106-0014-010F	6/12/06	14:23	SE	C	BP	X					Transferred from COC 2006-00391			
9106-0014-016F	6/12/06	14:51	SE	C	BP	X					Transferred from COC 2006-00391			
9106-0014-022F	6/12/06	15:12	SE	C	BP	X					Transferred from COC 2006-00391			
9106-0014-013F	6/13/06	15:06	SE	C	BP	X					Transferred from COC 2006-00394			
9106-0014-024F	6/07/06	09:58	SE	C	BP	X					Transferred from COC 2006-00385			
NOTES: PO #: 002332 MSR #: 06- <sup>0988</sup> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: _____ Deg C Custody Sealed? YES/NO Custody Seal Intact? YES/NO	
1) Relinquished By JAIME RICARTE			Date/Time 7-12-06/1200			2) Received By <i>Marion [Signature]</i>			Date/Time 7/13/06 945			Bill of Lading # 7921 4950 3967		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00457

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested				Lab Use Only					
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924						FSSGAM	FSSALL						Comments:		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones													Comment, Preservation		Lab Sample ID
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.															
Sample Designation	Date	Time													
010 9106-0014-025F	6/7/06	10:18	SE	C	BP	X					Transferred from COC 2006-00387				
011 9106-0014-031F	6/7/06	10:44	SE	C	BP	X					Transferred from COC 2006-00387				
012 9106-0014-017F	6/9/06	07:39	SE	C	BP	X					Transferred from COC 2006-00387				
013 9106-0014-023F	6/9/06	08:23	SE	C	BP	X					Transferred from COC 2006-00387				
014 9106-0014-035F	6/9/06	09:03	SE	C	BP	X					Transferred from COC 2006-00387				
015 9106-0014-038F	6/9/06	10:59	SE	C	BP		X				Transferred from COC 2006-00387				
016 9106-0014-039F	6/9/06	09:28	SE	C	BP	X					Transferred from COC 2006-00387				
017 9106-0014-042F	6/9/06	09:53	SE	C	BP	X					Transferred from COC 2006-00387				
018 9106-0014-034F	6/9/06	10:11	SE	C	BP	X					Transferred from COC 2006-00387				
NOTES: PO #: 002332 MSR #: 06-0988 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: ___ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>			
1) Relinquished By JAIME RICARTE			Date/Time 7-12-06/1200			2) Received By <i>Marian Sothman</i>			Date/Time 7/13/06 945			Bill of Lading # 7921 4950 3989			
3) Relinquished By			Date/Time			4) Received By			Date/Time						
5) Relinquished By			Date/Time			6) Received By			Date/Time						

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00458

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Lab Use Only									
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924						FSSGAM	FSSALL						Comments:							
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones																				
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.																				
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID									
9106-0014-029F	6/09/06	08:42	SE	C	BP	X				Transferred from COC 2006-00387										
9106-0014-009F	6/13/06	08:44	SE	C	BP	X				Transferred from COC 2006-00392										
9106-0014-028F	6/13/06	08:08	SE	C	BP	X				Transferred from COC 2006-00392										
9106-0014-028FS	6/13/06	08:08	SE	C	BP	X				Transferred from COC 2006-00392										
9106-0014-036F	6/13/06	09:38	SE	C	BP	X				Transferred from COC 2006-00392										
9106-0014-037F	6/13/06	09:12	SE	C	BP		X			Transferred from COC 2006-00392										
9106-0014-040F	6/13/06	10:42	SE	C	BP	X				Transferred from COC 2006-00392										
9106-0014-041F	6/13/06	10:13	SE	C	BP	X				Transferred from COC 2006-00392										
9106-0014-041FS	6/13/06	10:13	SE	C	BP	X				Transferred from COC 2006-00392										
NOTES: PO #: 002332 MSR #: 06-0984 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: ___ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>								
1) Relinquished By JAIME RICARTE			Date/Time 7-12-06/12:00		2) Received By <i>Marian Sathorn</i>			Date/Time 7/13/06 9:45		Bill of Lading # 7921 4950 401A										
3) Relinquished By			Date/Time		4) Received By			Date/Time												
5) Relinquished By			Date/Time		6) Received By			Date/Time												

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**Connecticut Yankee Atomic Power Company**

162 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00459

Project Name: **Haddam Neck Decommissioning**

Contact Name & Phone:  
Jack McCarthy 860-267-2556 Ext. 3924

Analytical Lab (Name, City, State)  
General Engineering Laboratories  
2040 Savage Road, Charleston SC. 29407  
843 556 8171. Attn. Cheryl Jones

Priority:  30 D.  14 D.  7 D.

**Analyses Requested**



Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL	Comment, Preservation	Lab Sample ID
026 9106-0014-012F	6/06/06	12:47	SE	C	BP	X		Transferred from COC 2006-00384	
045 9106-0014-018F	6/06/06	14:45	SE	C	BP		X	Transferred from COC 2006-00384	
027 9106-0014-019F	6/06/06	14:25	SE	C	BP	X		Transferred from COC 2006-00384	
028 9106-0014-001F	6/09/06	13:37	SE	C	BP	X		Transferred from COC 2006-00392	
029 9106-0014-002F	6/09/06	14:40	SE	C	BP	X		Transferred from COC 2006-00392	
030 9106-0014-002FS	6/09/06	14:40	SE	C	BP	X		Transferred from COC 2006-00392	
031 9106-0014-005F	6/09/06	14:12	SE	C	BP	X		Transferred from COC 2006-00392	
032 9106-0014-006F	6/09/06	13:07	SE	C	BP	X		Transferred from COC 2006-00392	
046 9106-0014-011F	6/09/06	12:44	SE	C	BP		X	Transferred from COC 2006-00392	

NOTES: PO #: 002332 MSR #: 06-  
09 88 SSWP# NA  LTP QA  Radwaste QA  Non QA

Samples Shipped Via:

- Fed Ex
- UPS
- Hand

Other

1) Relinquished By **JAIME RICARTE** Date/Time **7-12-06/1200**

2) Received By *[Signature]* Date/Time **7/13/06 0945**

3) Relinquished By \_\_\_\_\_ Date/Time \_\_\_\_\_

4) Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

5) Relinquished By \_\_\_\_\_ Date/Time \_\_\_\_\_

6) Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

Bill of Lading #

7921 4950 3990



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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00460

Project Name: <b>Haddam Neck Decommissioning</b>						Analyses Requested			Labels Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924									Comments		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones									Labels Only		
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.									Labels Only		
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL			Comment, Preservation	
047 023 024 035 036 9106-0014-003F	6/14/06	08:46	SE	C	BP		X			Transferred from COC 2006-00396	
9106-0014-007F	6/14/06	09:13	SE	C	BP	X				Transferred from COC 2006-00396	
9106-0014-008F	6/14/06	07:34	SE	C	BP	X				Transferred from COC 2006-00396	
9106-0014-008FS	6/14/06	07:34	SE	C	BP	X				Transferred from COC 2006-00396	
9106-0014-014F	6/14/06	10:23	SE	C	BP	X				Transferred from COC 2006-00396	
NOTES: PO #: 002332 MSR #: 06- 0988 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other	
1) Relinquished By JAIME RICALTE			Date/Time 7-12-06/1200			2) Received By <i>Marian G...</i>			Date/Time 7/13/06 0945		
3) Relinquished By			Date/Time			4) Received By			Date/Time		
5) Relinquished By			Date/Time			6) Received By			Date/Time		
Bill of Lading #										7921 4950 3978	

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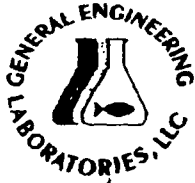
**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00461

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924							FSSGAM	FSSALL	[REDACTED]				
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.													
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code						Comment, Preservation	Lab Sample ID	
087 088 089 048 049 042 9106-0014-015F	6/14/06	11:39	SE	C	BP	X					Transferred from COC 2006-00396		
9106-0014-020F	6/14/06	13:10	SE	C	BP	X					Transferred from COC 2006-00396		
9106-0014-026F	6/14/06	13:53	SE	C	BP	X					Transferred from COC 2006-00396		
9106-0014-027F	6/14/06	14:26	SE	C	BP	X					Transferred from COC 2006-00396		
9106-0014-027FS	6/14/06	14:26	SE	C	BP	X					Transferred from COC 2006-00396		
9106-0014-033F	6/14/06	15:04	SE	C	BP	X							
NOTES: PO #: 002332 MSR #: 06- 0988 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		
1) Relinquished By JAIME RIVARTE			Date/Time 7-12-06/1200			2) Received By <i>Mariano Santos</i>			Date/Time 7/13/06 0945			[REDACTED]	
3) Relinquished By			Date/Time			4) Received By			Date/Time				
5) Relinquished By			Date/Time			6) Received By			Date/Time				
Bill of Lading #											7921 4950 3978		



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Yank</u>	SDG/ARCO/Work Order: <u>16704</u>
Date Received: <u>7/13/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant # ice bags blue ice dry ice none other describe
3 Chain of custody documents included with shipment?				
4 Sample containers intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8 Samples received within holding time?				ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?				
14 Air Bill, Tracking #'s, & Additional Comments				
<b>Suspected Hazard Information</b>				RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?			High Level	Maximum Counts Observed*: <u>CPM 40</u>
B PCB Regulated?				Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.				Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification:				Initials: <u>[Signature]</u> Date: <u>7/12/06</u>



Figure 1. Sample Check-in List

Date/Time Received: 7/13/06 0945

SDG#: MSR# 06-0988

Work Order Number: 167014

Shipping Container ID: 792149503789 Chain of Custody #: 2006-00456

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature 24°C
5. Vermiculite/packing materials is: Wet  Dry
6. Number of samples in shipping container: 9
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: *Marina [Signature]* Date: 7/13/06 0945

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Figure 1. Sample Check-in List

Date/Time Received: 7/13/06 0945

SDG#: MSR#06-0988

Work Order Number: 167014

Shipping Container ID: 7921 4950 3978 Chain of Custody #: 2006-00457

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 24°C
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: 9
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: Marian Batters Date: 7/13/06 0945

telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Figure 1. Sample Check-in List

Date/Time Received: 7/13/06 0945

SDG#: MSR#06-0988

Work Order Number: 167014

Shipping Container ID: 7921 4950 3967 Chain of Custody #: 2006-00458

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 24°C
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: 9
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

\_\_\_\_\_

Sample Custodian/Laboratory: Marian Gathers Date: 7/13/06 0945

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Figure 1. Sample Check-in List

Date/Time Received: 7/13/06 0945  
SDG#: MSR#06-0988  
Work Order Number: 167014  
Shipping Container ID: 7921 4950 3990 Chain of Custody # 2006-00459

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature \_\_\_\_\_
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: \_\_\_\_\_
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	_____ hazard labels
<input checked="" type="checkbox"/> custody seals	_____ appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	_____ leaking
_____ broken	_____ have air bubbles

- 10. Were any anomalies identified in sample receipt? Yes  No
- 11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: Maria [Signature] Date: 7/13/06 0945  
Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Figure 1. Sample Check-in List

Date/Time Received: 7/13/06 0945

SDG#: USR#06-0988

Work Order Number: 107014

Shipping Container ID: 7921 4950 3998 04 Chain of Custody #: 2006-00460 -00461  
3978

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature 23°
5. Vermiculite/packing materials is: Wet  Dry
6. Number of samples in shipping container: 11
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No
11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: Amian Sathern Date: 7/13/06 0945  
Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

1167556/.

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### Connecticut Yankee Atomic Power Company

### Chain of Custody Form

No. 2006-00443

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924							FSSGAM	FSSALL	Sr-90	Ni-63	Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code						Comment, Preservation	Lab Sample ID		
1) 9106-0015-022F	6-27-06	16:24	SE	C	BP	X		X						
2) 9106-0015-023F	6-27-06	16:03	SE	C	BP	X		X						
3) 9106-0015-024F	6-27-06	15:42	SE	C	BP	X		X						
4) 9106-0015-026F	6-27-06	14:58	SE	C	BP	X		X						
5) 9106-0015-027F	6-27-06	15:17	SE	C	BP	X		X						
6) 9106-0015-028F	6-27-06	14:31	SE	C	BP	X		X						
7) 9106-0015-018F	6-27-06	17:18	SE	C	BP	X		X						
8) 9106-0015-025F	6-27-06	16:43	SE	C	BP	X		X						
9) 9106-0015-021F	6-27-06	17:01	SE	C	BP		X							
NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: 22 Deg. C  Custody Sealed? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Custody Seal Intact?  Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAIME RICART			Date/Time 7-20-06/1445			2) Received By K. Wright			Date/Time 7/10/06 0930					
3) Relinquished By			Date/Time			4) Received By			Date/Time			Bill of Lading # 7910 59 11 1301		

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### Chain of Custody Form

No. 2006-00448

#### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested				Comments	
Sample Designation	Date	Time				FSSGAM	FSSALL	Sr-90			
9106-0015-011F	6-28-06	14:39	SE	C	BP	X			X		
9106-0015-012F	6-28-06	10:58	SE	C	BP	X			X		
9106-0015-013F	6-28-06	10:04	SE	C	BP	X			X		
9106-0015-014F	6-28-06	09:05	SE	C	BP	X			X		
9106-0015-015F	6-28-06	08:25	SE	C	BP		X				
9106-0015-016F	6-28-06	08:46	SE	C	BP	X			X		
9106-0015-017F	6-28-06	09:47	SE	C	BP	X			X		
9106-0015-019F	6-28-06	09:25	SE	C	BP	X			X		
9106-0015-020F	6-28-06	07:59	SE	C	BP	X			X		

NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA  LTP QA  Radwaste QA  Non QA

Samples Shipped Via:

- Fed Ex
- UPS
- Hand

Other

Bill of Lading #

7910 5711 1286

Internal Container Temp: 21 Deg C

Custody Sealed? Y  N   
Custody Seal Intact? Y  N

1) Relinquished By JAIME RICARTE Date/Time 7-10-06/1445

2) Received By K. Leight Date/Time 7/10/06 0930

3) Relinquished By \_\_\_\_\_ Date/Time \_\_\_\_\_

4) Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

167556/

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00447

Project Name: Haddam Neck Decommissioning						Analyses Requested			Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL	Sr-90	Comments		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones											
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.											
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code					Comment, Preservation	Lab Sample ID
9106-0015-001F	6-28-06	13:36	SE	C	BP	X		X			
9106-0015-002F	6-28-06	14:15	SE	C	BP	X		X			
9106-0015-003F	6-28-06	13:15	SE	C	BP	X		X			
9106-0015-004F	6-28-06	12:54	SE	C	BP		X				
9106-0015-005F	6-28-06	15:47	SE	C	BP	X		X			
9106-0015-006F	6-28-06	16:10	SE	C	BP	X		X			
9106-0015-007F	6-28-06	11:33	SE	C	BP	X		X			
9106-0015-008F	6-28-06	11:10	SE	C	BP	X		X			
9106-0015-009F	6-28-06	10:25	SE	C	BP	X		X			
9106-0015-010F	6-28-06	15:17	SE	C	BP	X		X			
NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other			Internal Container Temp <u>23</u> Deg C Custody Sealed? <u>Y</u> Custody Seal Intact? <u>N</u>		
1) Relinquished By <u>JAYME RICARTE</u>			Date/Time <u>7-20-06/1445</u>			2) Received By <u>H. Light</u>			Date/Time <u>7/20/06 0930</u>		
3) Relinquished By			Date/Time			4) Received By			Date/Time		
						Bill of Lading # <u>791057111220</u>					



167556/.

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Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556							Chain of Custody Form				No. 2006-00468			
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested				Date/Time				
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL	Sr-90					Comments	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
26 9106-0015-005FS	6-28-06	15:47	SE	C	BP	X		X						
27 9106-0015-012FS	6-28-06	10:58	SE	C	BP	X		X						
28 9106-0015-018FS	6-27-06	17:18	SE	C	BP	X		X						
NOTES: PO #: 002332 MSR #: 06-1037 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other			
1) Relinquished By JAIME RUARTE			Date/Time 7-20-06/1445			2) Received By K. Wright			Date/Time 7/21/06 0930			Internal Container Temp: 21.1 Deg C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
Bill of Lading #											7910 5711 1286			



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Vank.</u>	SDG/ARCO/Work Order: <u>167554, 167555, 167556</u>
Date Received: <u>7/21/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>[Signature]</i>
Received By: <i>[Signature]</i>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	/			Circle: Coolant / ice bags blue ice dry ice <u>none</u> other (describe) <u>See Cont. Sheet.</u>
3 Chain of custody documents included with shipment?	/			
4 Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/	
8 Samples received within holding time?	/			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?			/	Sample ID's and containers affected: <u>See Cont. Sheet.</u>
10 Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11 Number of containers received match number indicated on COC?	/			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	/			

14 Air Bill, Tracking #'s, & Additional Comments	<u>See Sheet</u>		
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Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?	/			Maximum Counts Observed*: <u>cpm 40</u>
B PCB Regulated?	/			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification:				Initials: <i>[Signature]</i> Date: <u>7/21/06</u>

Figure 1. Sample Check-in List

Date/Time Received: 7/21/06 0930

SDG#: MSR#06-1035, MSR#06-1036, MSR#06-1037

Work Order Number: 167556

Shipping Container ID: See Cont. Sheet Chain of Custody #: See Cont. Sheet

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No  N/A
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature See Cont. Sheet
5. Vermiculite/packing materials is: Wet  Dry  N/A
6. Number of samples in shipping container: See Cont. Sheet
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: K. Wright Date: 7/21/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



Connecticut Yankee Atomic Power Company						Chain of Custody Form						No. 2006-00496			
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556															
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested						Lab Use Only Comments			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924						FSSGAM	FSSALL								169489%
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input checked="" type="checkbox"/> 3 D.															
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID		
9106-0001-132F			SE	C	BP	X									
9106-0001-112F			SE	C	BP	X									
9106-0001-132A			SE	C	BP	X									
9106-0001-132B			SE	C	BP	X									
9106-0001-132C			SE	C	BP	X									
9106-0001-132D			SE	C	BP	X									
9106-0001-112A			SE	C	BP	X									
9106-0001-112B			SE	C	BP	X									
9106-0001-112C			SE	C	BP	X									
NOTES: PO #: 002332    MSR #: 06-1130    SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: _____ Deg. Custody Sealed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Custody Seal Intact? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		
1) Relinquished By <i>JAIME RICARTE</i>			Date/Time <i>8-16-06/1155</i>			2) Received By <i>C. Desaut</i>			Date/Time <i>8/17/06/915A</i>			Bill of Lading # <i>7921 8130 3482</i>			
3) Relinquished By			Date/Time			4) Received By			Date/Time						
5) Relinquished By			Date/Time			6) Received By			Date/Time						

Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						Chain of Custody Form					No. 2006-00497			
Project Name: Haddam Neck Decommissioning						Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3924						FSSGAM	FSSALL						Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input checked="" type="checkbox"/> 3 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code							Comment, Preservation		
9106-0001-112D			SE	C	BP	X								
NOTES: PO #: 002332    MSR #: 06-1130    SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Sealed? <input type="checkbox"/> Custody Seal Intact? <input type="checkbox"/>	
1) Relinquished By <i>JAIME PICARTE</i>			Date/Time <i>8-16-06/1155</i>			2) Received By <i>C. Demicco</i>			Date/Time <i>8/17/06 @ 915+</i>			Bill of Lading #  <i>7921 8130 3482</i>		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

Figure 1. Sample Check-in List

Date/Time Received: 8/17/06 @ 9:55A.  
SDG#: MSR#06-1130  
Work Order Number: 1694897.  
Shipping Container ID: 7921 8130 3482 Chain of Custody #: 2806-80496

1. Custody Seals on shipping container intact? Yes [ ] No []
2. Custody Seals dated and signed? Yes [ ] No []
3. Chain-of-Custody record present? Yes [] No [ ]
4. Cooler temperature 26°C
5. Vermiculite/packing materials is: Wet [] Dry [ ]
6. Number of samples in shipping container: 10 - samples
7. Sample holding times exceeded? Yes [ ] No [ ]

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No []
11. Description of anomalies (include sample numbers): none

Sample Custodian/Laboratory: C. Sui coA Date: 8/17/06  
Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

- Connecticut Yankee Atomic Power Company -			
	[Date]	É	[TIME]
9106--132 F	8-7-06	É	14:09
9106--132 C	8-11-06	É	12:58
9106--132 B	8-11-06	É	10:56
9106--132 A	8-11-06	É	10:05
9106--132 D	8-11-06	É	1340
9106--112 F	8-2-06	É	13:54
9106--112 C	8-15-06	É	07:43
9106--112 B	8-14-06	É	14:55
9106--112 A	8-14-06	É	14:23
9106--112 D	8-15-06	É	08:47
* LOC # 2006-00498 *			
9106--001 SUR	8-10-06	É	10:14
9106--002 SUR	8-10-06	É	09:35
9106--003 SUR	8-10-06	É	10:53
9106--004 SUR	8-10-06	É	12:53
9106--005 SUR	8-10-06	É	14:09
9106--006 SUR	8-10-06	É	14:35



# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 170683**

**Method/Analysis Information**

**Product:** Alphaspec Am241, Cm, Solid ALL FSS  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 565213  
**Prep Batch Number:** 564526  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 564525

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
170683010	9106-0001-132F
1201175602	Method Blank (MB)
1201175603	170683004(9106-0013-006F) Sample Duplicate (DUP)
1201175604	170683004(9106-0013-006F) Matrix Spike (MS)
1201175605	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683004 (9106-0013-006F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The sample and the duplicate, 1201175603 (9106-0013-006F) and 170683004 (9106-0013-006F), did not meet the relative percent difference requirement, however they do meet the relative error ratio requirement with value of 2.11.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Alphaspec Am241, Cm, Solid ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	567705
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201181287	Method Blank (MB)
1201181288	170683003(9106-0012-014F) Sample Duplicate (DUP)
1201181289	170683003(9106-0012-014F) Matrix Spike (MS)
1201181290	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering

Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683003 (9106-0012-014F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Batch reprepared due to Thorium interference.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The sample and the duplicate, 1201181288 (9106-0012-014F) and 170683003 (9106-0012-014F), did not meet the Am-241 relative percent difference requirement, however they do meet the relative error ratio requirement with a value of 0.512.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:**

**Alphaspec Pu, Solid-ALL FSS**

Analytical Method: DOE EML HASL-300, Pu-11-RC Modified  
Prep Method: Ash Soil Prep  
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep  
Analytical Batch Number: 565210  
Prep Batch Number: 564526  
Dry Soil Prep GL-RAD-A-021 Batch Number: 564525

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201175591	Method Blank (MB)
1201175592	170683001(9106-0011-018F) Sample Duplicate (DUP)
1201175593	170683001(9106-0011-018F) Matrix Spike (MS)
1201175594	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 170683001 (9106-0011-018F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Alphaspec Pu, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565214
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
170683010	9106-0001-132F
1201175606	Method Blank (MB)
1201175607	170683004(9106-0013-006F) Sample Duplicate (DUP)
1201175608	170683004(9106-0013-006F) Matrix Spike (MS)
1201175609	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683004 (9106-0013-006F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Pu241, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565216
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
170683010	9106-0001-132F
1201175614	Method Blank (MB)
1201175615	170683004(9106-0013-006F) Sample Duplicate (DUP)

1201175616 170683004(9106-0013-006F) Matrix Spike (MS)  
1201175617 Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683004 (9106-0013-006F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples 1201175614 (MB), 1201175615 (9106-0013-006F), 170683004 (9106-0013-006F), 170683005 (9106-0013-005F), 170683008 (9106-0015-018F), 170683009 (9106-0015-002F) and 170683010 (9106-0001-132F) were recounted due to high MDAs.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**



**Product:** Liquid Scint Pu241, Solid-ALL FSS  
Analytical Method: DOE EML HASL-300, Pu-11-RC Modified  
Prep Method: Ash Soil Prep  
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep  
Analytical Batch Number: 567883  
Prep Batch Number: 564526  
Dry Soil Prep GL-RAD-A-021 Batch Number: 564525

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201181751	Method Blank (MB)
1201181752	170683001(9106-0011-018F) Sample Duplicate (DUP)
1201181753	170683001(9106-0011-018F) Matrix Spike (MS)
1201181754	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 170683001 (9106-0011-018F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

The batch was repped due to high MDAs.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>GFPC, Sr90, solid-ALL FSS</b>
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565250
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201175679	Method Blank (MB)
1201175680	170683002(9106-0012-005F) Sample Duplicate (DUP)
1201175681	170683002(9106-0012-005F) Matrix Spike (MS)
1201175682	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683002 (9106-0012-005F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples 170683001 (9106-0011-018F) and 170683006 (9106-0014-012F) were recounted due to high MDAs.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Samples were dried and reweighed due to low matrix spike recovery.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>GFPC, Sr90, solid-ALL FSS</b>
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565253
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683010	9106-0001-132F

1201175686 Method Blank (MB)  
1201175687 170683005(9106-0013-005F) Sample Duplicate (DUP)  
1201175688 170683005(9106-0013-005F) Matrix Spike (MS)  
1201175689 Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683005 (9106-0013-005F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 564445

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
1201173840	Method Blank (MB)
1201173841	170544018(9304-0002-005F) Sample Duplicate (DUP)
1201173842	170544018(9304-0002-005F) Matrix Spike (MS)
1201173843	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170544018 (9304-0002-005F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 564623

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201174253	Method Blank (MB)
1201174254	170683001(9106-0011-018F) Sample Duplicate (DUP)
1201174255	170683001(9106-0011-018F) Matrix Spike (MS)
1201174256	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683001 (9106-0011-018F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Sample 1201174254 (9106-0011-018F) was recounted due to high MDA.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 565648

<b>Sample ID</b>	<b>Client ID</b>
170683010	9106-0001-132F
1201176786	Method Blank (MB)
1201176787	170683010(9106-0001-132F) Sample Duplicate (DUP)
1201176788	170683010(9106-0001-132F) Matrix Spike (MS)
1201176789	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683010 (9106-0001-132F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565287
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201175808	Method Blank (MB)
1201175809	170683006(9106-0014-012F) Sample Duplicate (DUP)
1201175810	170683006(9106-0014-012F) Matrix Spike (MS)
1201175811	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.



**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683006 (9106-0014-012F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples 1201175810 (9106-0014-012F), 170683001 (9106-0011-018F), 170683002 (9106-0012-005F) and 170683006 (9106-0014-012F) were recounted due to the quench number being outside the calibration range.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG:

NCR 356906 was generated due to Container scanning event for custody missed. 1. The analyst did not scan the sample 170683001 into the batch prior to analysis, however the samples did remain in their custody at all times. 1. The error has been corrected and the analyst has been instructed on the proper scanning procedures. Reporting results.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565291
Prep Batch Number:	564526

Dry Soil Prep GL-RAD-A-021 Batch Number: 564525

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
170683010	9106-0001-132F
1201175818	Method Blank (MB)
1201175819	170683004(9106-0013-006F) Sample Duplicate (DUP)
1201175820	170683004(9106-0013-006F) Matrix Spike (MS)
1201175821	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 170683004 (9106-0013-006F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Preparation Information**

All preparation criteria have been met for these analyses.

##### **Sample Re-prep/Re-analysis**

Samples 170683004 (9106-0013-006F) and 170683009 (9106-0015-002F) were recounted due to the quench number being outside the calibration range.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Ni63, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565289
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201175814	Method Blank (MB)
1201175815	170683006(9106-0014-012F) Sample Duplicate (DUP)
1201175816	170683006(9106-0014-012F) Matrix Spike (MS)
1201175817	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683006 (9106-0014-012F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Ni63, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	565293
Prep Batch Number:	564526
Dry Soil Prep GL-RAD-A-021 Batch Number:	564525

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
170683010	9106-0001-132F
1201175822	Method Blank (MB)
1201175823	170683004(9106-0013-006F) Sample Duplicate (DUP)
1201175824	170683004(9106-0013-006F) Matrix Spike (MS)
1201175825	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683004 (9106-0013-006F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS

Analytical Method: EPA 906.0 Modified

Analytical Batch Number: 564447

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
1201173844	Method Blank (MB)
1201173845	170544018(9304-0002-005F) Sample Duplicate (DUP)
1201173846	170544018(9304-0002-005F) Matrix Spike (MS)
1201173847	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 13.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170544018 (9304-0002-005F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples 1201173846 (9304-0002-005F) and 1201173847 (LCS) were recounted due to low/high recovery.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG:

NCR 356177 was generated due to Container scanning event for custody missed. 1. Container scanning event for custody missed: The analyst did not scan the samples into the batch prior to analysis, however the samples did remain in their custody at all times. 1. The error has been corrected and the analyst has been instructed on proper scanning procedures. Reporting results

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2, ALL FSS

**Analytical Method:** EPA 906.0 Modified

Analytical Batch Number: 564514

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201174038	Method Blank (MB)
1201174039	170683006(9106-0014-012F) Sample Duplicate (DUP)
1201174040	170683006(9106-0014-012F) Matrix Spike (MS)
1201174041	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683006 (9106-0014-012F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS

Analytical Method: EPA 906.0 Modified

Analytical Batch Number: 565650

<b>Sample ID</b>	<b>Client ID</b>
170683010	9106-0001-132F
1201176794	Method Blank (MB)
1201176795	170683010(9106-0001-132F) Sample Duplicate (DUP)
1201176796	170683010(9106-0001-132F) Matrix Spike (MS)
1201176797	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 13.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683010 (9106-0001-132F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.



**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS

Analytical Method: EPA EERF C-01 Modified

Analytical Batch Number: 564449

<b>Sample ID</b>	<b>Client ID</b>
170683004	9106-0013-006F
170683005	9106-0013-005F
170683008	9106-0015-018F
170683009	9106-0015-002F
1201173848	Method Blank (MB)
1201173849	170544019(9304-0002-008F) Sample Duplicate (DUP)
1201173850	170544019(9304-0002-008F) Matrix Spike (MS)
1201173851	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170544019 (9304-0002-008F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Sample 1201173849 (9304-0002-008F) was recounted due to a negative result greater than three times the error. Samples 170683008 (9106-0015-018F) and 170683009 (9106-0015-002F) were recounted to verify results. Second counts being reported.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS

Analytical Method: EPA EERF C-01 Modified

Analytical Batch Number: 564520

<b>Sample ID</b>	<b>Client ID</b>
170683001	9106-0011-018F
170683002	9106-0012-005F
170683003	9106-0012-014F
170683006	9106-0014-012F
170683007	9106-0014-033F
1201174056	Method Blank (MB)
1201174057	170683007(9106-0014-033F) Sample Duplicate (DUP)
1201174058	170683007(9106-0014-033F) Matrix Spike (MS)
1201174059	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683007 (9106-0014-033F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS

**Analytical Method:** EPA EERF C-01 Modified

**Analytical Batch Number:** 565649

<b>Sample ID</b>	<b>Client ID</b>
170683010	9106-0001-132F
1201176790	Method Blank (MB)
1201176791	170683010(9106-0001-132F) Sample Duplicate (DUP)
1201176792	170683010(9106-0001-132F) Matrix Spike (MS)
1201176793	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 170683010 (9106-0001-132F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

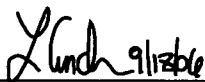
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer/Date: \_\_\_\_\_



<b>COMPANY - WIDE NONCONFORMANCE REPORT</b>			
<b>Mo.Day Yr.</b> 11-SEP-06	<b>Division:</b> Radiochemistry	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> LSC	<b>Test / Method:</b> DOE RESL Fe-1, Modified	<b>Matrix Type:</b> Solid	<b>Client Code:</b> YANK
<b>Batch ID:</b> 565287	<b>Sample Numbers:</b> See Below		
<b>Potentially affected work order(s)(SDG): 170683</b>			
<b>Application Issues:</b> Container scanning event for custody missed			
<b>Specification and Requirements Nonconformance Description:</b>		<b>NRG Disposition:</b>	
1. The analyst did not scan the sample 170683001 into the batch prior to analysis, however the samples did remain in their custody at all times.		1. The error has been corrected and the analyst has been instructed on the proper scanning procedures. Reporting results.	

**Originator's Name:**  
 Melanie Aycock      11-SEP-06

**Data Validator/Group Leader:**  
 Heather Anderson      11-SEP-06

**Quality Review:**

**Director:**

<b>COMPANY - WIDE NONCONFORMANCE REPORT</b>			
<b>Mo. Day Yr.</b> 08-SEP-06	<b>Division:</b> Radiochemistry	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> LSC	<b>Test / Method:</b> EPA 906.0 Modified	<b>Matrix Type:</b> Solid	<b>Client Code:</b> YANK
<b>Batch ID:</b> 564447	<b>Sample Numbers:</b> See Below		
<b>Potentially affected work order(s)(SDG): 170543(MSR#06-1172),170544(MSR#06-1174),170683</b>			
<b>Application Issues:</b> Container scanning event for custody missed			
<b>Specification and Requirements Nonconformance Description:</b>		<b>NRG Disposition:</b>	
1. Container scanning event for custody missed: The analyst did not scan the samples into the batch prior to analysis, however the samples did remain in their custody at all times.		1. The error has been corrected and the analyst has been instructed on proper scanning procedures. Reporting results	

**Originator's Name:**  
 Kenshalla Oston      08-SEP-06

**Data Validator/Group Leader:**  
 Melanie Aycock      08-SEP-06

**Quality Review:**

**Director:**

# SAMPLE DATA SUMMARY

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: 170683 GEL Work Order: 170683

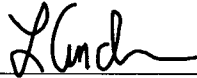
**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by \_\_\_\_\_



**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd  
 East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID:	9106 0011 018F	Project:	YANK01204
Sample ID:	170683001	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	17 MAY 06		
Receive Date:	21 JUN 06		
Collector:	Client		
Moisture:	36.3%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.0277	+/- 0.0418	0.0128	+/- 0.042	0.0643	pCi/g	TC1	09/14/06	0931	567705		1
Curium 242	U	0.00666	+/- 0.0505	0.037	+/- 0.0505	0.138	pCi/g						
Curium 243/244	U	0.0167	+/- 0.0348	0.0388	+/- 0.0349	0.117	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.148	+/- 0.269	0.289	+/- 0.270	0.795	pCi/g	MXA	09/11/06	0919	565210		3
Plutonium 239/240	U	0.00321	+/- 0.174	0.144	+/- 0.174	0.505	pCi/g	1					
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	9.87	+/- 11.1	8.90	+/- 11.1	18.6	pCi/g	TC1	09/17/06	0214	567883		4
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00422	+/- 0.0151	0.0123	+/- 0.0151	0.0271	pCi/g	KSD1	09/11/06	1917	565250		6
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	3.33	+/- 6.35	5.16	+/- 6.35	10.9	pCi/g	DFA1	09/05/06	1123	564514		7
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.00	+/- 0.0818	0.0686	+/- 0.0818	0.140	pCi/g	AXD2	09/06/06	0035	564520		8
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	0.852	+/- 61.3	41.7	+/- 61.3	86.4	pCi/g	MXP1	09/10/06	1419	565287		9
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.341	+/- 0.291	0.235	+/- 0.291	0.485	pCi/g	KXR1	09/06/06	1232	564623		10

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	09/01/06	1328	564525

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Am 05 RC Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0011 018F  
Sample ID: 170683001

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
3	DOE EML HASL	300, Pu	11 RC Modified									
4	DOE EML HASL	300, Pu	11 RC Modified									
5	DOE EML HASL	300, Pu	11 RC Modified									
6	EPA 905.0		Modified									
7	EPA 906.0		Modified									
8	EPA EERF C	01	Modified									
9	DOE RESL Fe	1,	Modified									
10	DOE EML HASL	300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	89	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	38	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	89	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	51	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	75	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	78	(15% 125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0011 018F  
Sample ID: 170683001

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0012 005F  
Sample ID: 170683002  
Matrix: SE  
Collect Date: 23 JUN 06  
Receive Date: 07 JUL 06  
Collector: Client  
Moisture: 23.4%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.00725	+/- 0.0262	0.0156	+/- 0.0262	0.0644	pCi/g	TC1	09/14/06	0931	567705	1	
Curium 242	U	0.00	+/- 0.0343	0.00	+/- 0.0343	0.0474	pCi/g						
Curium 243/244	U	0.00297	+/- 0.0249	0.0111	+/- 0.025	0.0557	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0214	+/- 0.203	0.159	+/- 0.203	0.498	pCi/g	MXA	09/11/06	0919	565210	3	
Plutonium 239/240	U	0.120	+/- 0.237	0.134	+/- 0.238	0.449	pCi/g	1					
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	10	+/- 8.47	7.55	+/- 8.47	15.8	pCi/g	TC1	09/17/06	0230	567883	4	
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00415	+/- 0.016	0.0141	+/- 0.016	0.0332	pCi/g	KSD1	09/08/06	1803	565250	6	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	4.39	+/- 5.57	4.46	+/- 5.57	9.42	pCi/g	DFA1	09/05/06	1155	564514	7	
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0271	+/- 0.0822	0.0694	+/- 0.0822	0.141	pCi/g	AXD2	09/06/06	0253	564520	8	
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	3.71	+/- 50.4	34.5	+/- 50.4	71.6	pCi/g	MXP1	09/10/06	1435	565287	9	
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	5.04	+/- 7.63	6.28	+/- 7.63	12.9	pCi/g	MXP1	09/08/06	0035	565289	10	
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.057	+/- 0.270	0.225	+/- 0.270	0.464	pCi/g	KXR1	09/06/06	1249	564623	11	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	09/01/06	1328	564525

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0012 005F  
Sample ID: 170683002

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
2	DOE EML HASL	300, Am	05 RC Modified									
3	DOE EML HASL	300, Pu	11 RC Modified									
4	DOE EML HASL	300, Pu	11 RC Modified									
5	DOE EML HASL	300, Pu	11 RC Modified									
6	EPA 905.0		Modified									
7	EPA 906.0		Modified									
8	EPA EERF C	01	Modified									
9	DOE RESL Fe	1,	Modified									
10	DOE RESL Ni	1,	Modified									
11	DOE EML HASL	300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	90	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	47	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	78	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	99	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	67	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	85	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	82	(15% 125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0012 005F  
Sample ID: 170683002

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0012 014F  
Sample ID: 170683003  
Matrix: SE  
Collect Date: 21 JUN 06  
Receive Date: 07 JUL 06  
Collector: Client  
Moisture: 24.1%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241	U	0.012	+/- 0.0233	0.00	+/- 0.0234	0.032	pCi/g	TC1	09/14/06	0931	567705	1	
Curium 242	U	0.00814	+/- 0.0351	0.0215	+/- 0.0351	0.089	pCi/g						
Curium 243/244	U	0.00571	+/- 0.0246	0.0151	+/- 0.0246	0.0624	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.00589	+/- 0.322	0.272	+/- 0.322	0.744	pCi/g	MXA	09/11/06	0919	565210	3	
Plutonium 239/240	U	0.0588	+/- 0.218	0.147	+/- 0.218	0.494	pCi/g	1					
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	4.22	+/- 11.5	9.47	+/- 11.5	19.8	pCi/g	TC1	09/17/06	0246	567883	4	
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.0176	+/- 0.0191	0.0133	+/- 0.0191	0.0316	pCi/g	KSD1	09/08/06	1803	565250	6	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	1.38	+/- 6.13	5.08	+/- 6.13	10.7	pCi/g	DFA1	09/05/06	1226	564514	7	
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.00209	+/- 0.0745	0.0625	+/- 0.0745	0.127	pCi/g	AXD2	09/06/06	0501	564520	8	
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	13.9	+/- 36.7	24.3	+/- 36.7	50.7	pCi/g	MXP1	09/07/06	2253	565287	9	
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	4.26	+/- 8.20	6.78	+/- 8.20	13.9	pCi/g	MXP1	09/08/06	0106	565289	10	
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.269	+/- 0.281	0.228	+/- 0.281	0.470	pCi/g	KXR1	09/06/06	1305	564623	11	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	AXP2	09/01/06	1328	564525

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified

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## Certificate of Analysis

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Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0012 014F  
Sample ID: 170683003

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
2	DOE EML HASL	300, Am	05 RC Modified									
3	DOE EML HASL	300, Pu	11 RC Modified									
4	DOE EML HASL	300, Pu	11 RC Modified									
5	DOE EML HASL	300, Pu	11 RC Modified									
6	EPA 905.0		Modified									
7	EPA 906.0		Modified									
8	EPA EERF C	01	Modified									
9	DOE RESL Fe	1,	Modified									
10	DOE RESL Ni	1,	Modified									
11	DOE EML HASL	300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	95	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	44	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	84	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	100	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	70	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	79	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	81	(15% 125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424

Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0012 014F  
Sample ID: 170683003

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0013 006F  
Sample ID: 170683004  
Matrix: SE  
Collect Date: 21 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.187	+/- 0.170	0.0339	+/- 0.172	0.170	pCi/g	MXA	09/12/06	0844	565213	1	1
Curium 242	U	0.0387	+/- 0.0438	0.0836	+/- 0.0442	0.313	pCi/g						
Curium 243/244	U	0.00608	+/- 0.118	0.102	+/- 0.118	0.308	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.012	+/- 0.0236	0.045	+/- 0.0236	0.226	pCi/g	MXA	09/11/06	0919	565214	2	1
Plutonium 239/240	U	0.0601	+/- 0.0526	0.100	+/- 0.0531	0.337	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	16.2	+/- 13.4	10.8	+/- 13.5	22.3	pCi/g	MXA	09/12/06	2245	565216	3	1
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.000813	+/- 0.0187	0.0156	+/- 0.0187	0.036	pCi/g	KSD1	09/08/06	1932	565253	4	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	0.997	+/- 4.80	3.98	+/- 4.80	8.39	pCi/g	DFA1	09/05/06	1847	564447	5	
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0199	+/- 0.109	0.0921	+/- 0.109	0.192	pCi/g	AXD2	09/06/06	0955	564449	6	
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	33.7	+/- 51.9	34.2	+/- 52.0	71.2	pCi/g	MXP1	09/11/06	1150	565291	7	
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	0.395	+/- 9.40	7.88	+/- 9.40	16.2	pCi/g	MXP1	09/08/06	2220	565293	8	
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.0409	+/- 0.273	0.231	+/- 0.273	0.475	pCi/g	KXR1	09/06/06	1637	564445	9	

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EPA 905.0 Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0013 006F  
Sample ID: 170683004

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
5	EPA 906.0 Modified											
6	EPA EERF C 01 Modified											
7	DOE RESL Fe 1, Modified											
8	DOE RESL Ni 1, Modified											
9	DOE EML HASL 300, Tc 02 RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	86	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	60	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	72	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	100	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	70	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	43	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	79	(15% 125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on an "as received" basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0013 005F  
Sample ID: 170683005  
Matrix: SE  
Collect Date: 21 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.505	+/- 0.295	0.0542	+/- 0.304	0.224	pCi/g		MXA	09/12/06	0844	565213	1
Curium 242	U	0.00	+/- 0.119	0.00	+/- 0.119	0.165	pCi/g						
Curium 243/244	U	0.0327	+/- 0.0868	0.0387	+/- 0.0869	0.194	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.008	+/- 0.0157	0.0299	+/- 0.0157	0.150	pCi/g		MXA	09/11/06	0919	565214	2
Plutonium 239/240	U	0.0399	+/- 0.035	0.0668	+/- 0.0352	0.224	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	7.84	+/- 13.5	11.1	+/- 13.5	22.8	pCi/g		MXA	09/12/06	2332	565216	3
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.000759	+/- 0.0157	0.0133	+/- 0.0157	0.0313	pCi/g		KSD1	09/08/06	1932	565253	4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	0.175	+/- 4.77	4.01	+/- 4.77	8.45	pCi/g		DFA1	09/05/06	1919	564447	5
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0246	+/- 0.107	0.0905	+/- 0.107	0.188	pCi/g		AXD2	09/06/06	1027	564449	6
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	8.33	+/- 39.2	26.6	+/- 39.2	55.3	pCi/g		MXP1	09/08/06	0121	565291	7
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	1.92	+/- 5.36	4.55	+/- 5.36	9.32	pCi/g		MXP1	09/08/06	2323	565293	8
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.0807	+/- 0.273	0.227	+/- 0.273	0.468	pCi/g		KXR1	09/06/06	1654	564445	9

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EPA 905.0 Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0013 005F  
Sample ID: 170683005

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
5	EPA 906.0	Modified										
6	EPA EERF C 01	Modified										
7	DOE RESL Fe 1,	Modified										
8	DOE RESL Ni 1,	Modified										
9	DOE EML HASL 300,	Tc 02 RC Modified										

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	68	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	86	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	71	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	101	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	71	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	72	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	80	(15% 125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on an "as received" basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0014 012F  
Sample ID: 170683006  
Matrix: SE  
Collect Date: 06 JUN 06  
Receive Date: 13 JUL 06  
Collector: Client

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.0945	+/- 0.0698	0.0158	+/- 0.0709	0.0654	pCi/g	TC1	09/14/06	0931	567705		1
Curium 242	U	0.0191	+/- 0.0374	0.00	+/- 0.0375	0.0517	pCi/g						
Curium 243/244	U	0.0473	+/- 0.0497	0.0113	+/- 0.050	0.0567	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.113	+/- 0.329	0.328	+/- 0.330	0.930	pCi/g	MXA	09/11/06	0919	565210		3
Plutonium 239/240	U	0.097	+/- 0.0951	0.181	+/- 0.0963	0.637	pCi/g						1
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	4.84	+/- 11.6	9.54	+/- 11.6	20.0	pCi/g	TC1	09/17/06	0302	567883		4
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00246	+/- 0.00901	0.00776	+/- 0.00901	0.0169	pCi/g	KSD1	09/11/06	1917	565250		6
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	3.44	+/- 6.25	5.07	+/- 6.25	10.7	pCi/g	DFA1	09/05/06	1258	564514		7
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0486	+/- 0.0773	0.064	+/- 0.0773	0.130	pCi/g	AXD2	09/06/06	0635	564520		8
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	12.6	+/- 44.5	30.6	+/- 44.5	63.6	pCi/g	MPX1	09/10/06	1451	565287		9
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	4.82	+/- 7.80	6.44	+/- 7.80	13.2	pCi/g	MPX1	09/08/06	0138	565289		10
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.0865	+/- 0.281	0.234	+/- 0.281	0.481	pCi/g	KXR1	09/06/06	1321	564623		11

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Am 05 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	DOE EML HASL 300, Pu 11 RC Modified
5	DOE EML HASL 300, Pu 11 RC Modified
6	EPA 905.0 Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0014 012F  
Sample ID: 170683006

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
7	EPA 906.0 Modified											
8	EPA EERF C 01 Modified											
9	DOE RESL Fe 1, Modified											
10	DOE RESL Ni 1, Modified											
11	DOE EML HASL 300, Tc 02 RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	93	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	33	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	84	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	91	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	74	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	80	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	79	(15% 125%)

**Notes:**

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on an "as received" basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0014 033F  
 Sample ID: 170683007  
 Matrix: SE  
 Collect Date: 14 JUN 06  
 Receive Date: 13 JUL 06  
 Collector: Client

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.0906	+/- 0.0692	0.0118	+/- 0.0703	0.0594	pCi/g	TC1	09/14/06	0931	567705		1
Curium 242	U	0.0195	+/- 0.0383	0.00	+/- 0.0384	0.053	pCi/g						
Curium 243/244		0.0799	+/- 0.0639	0.00	+/- 0.0648	0.0361	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0396	+/- 0.254	0.229	+/- 0.254	0.638	pCi/g	MXA	09/11/06	0919	565210		3
Plutonium 239/240	U	0.203	+/- 0.182	0.244	+/- 0.184	0.666	pCi/g	1					
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	4.34	+/- 11.1	9.14	+/- 11.1	19.2	pCi/g	TC1	09/17/06	0319	567883		4
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00411	+/- 0.0167	0.0133	+/- 0.0167	0.0316	pCi/g	KSD1	09/08/06	1803	565250		6
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	3.13	+/- 5.10	4.12	+/- 5.10	8.71	pCi/g	DFA1	09/05/06	1330	564514		7
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0995	+/- 0.0918	0.075	+/- 0.0918	0.153	pCi/g	AXD2	09/06/06	0807	564520		8
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	19.3	+/- 37.9	24.9	+/- 37.9	51.8	pCi/g	MXP1	09/07/06	2326	565287		9
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	4.62	+/- 7.14	5.88	+/- 7.14	12.1	pCi/g	MXP1	09/08/06	0209	565289		10
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.00	+/- 0.282	0.236	+/- 0.282	0.487	pCi/g	KXR1	09/06/06	1338	564623		11

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Am 05 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	DOE EML HASL 300, Pu 11 RC Modified
5	DOE EML HASL 300, Pu 11 RC Modified
6	EPA 905.0 Modified



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0014 033F  
Sample ID: 170683007

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
7	EPA 906.0 Modified											
8	EPA EERF C 01 Modified											
9	DOE RESL Fe 1, Modified											
10	DOE RESL Ni 1, Modified											
11	DOE EML HASL 300, Tc 02 RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	87	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	41	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	89	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	99	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	76	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	84	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	78	(15% 125%)

**Notes:**

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on an "as received" basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0015 018F  
Sample ID: 170683008  
Matrix: SE  
Collect Date: 27 JUN 06  
Receive Date: 21 JUL 06  
Collector: Client

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.193	+/- 0.166	0.00	+/- 0.168	0.101	pCi/g		MXA	09/12/06	0844	565213	1
Curium 242	U	0.0784	+/- 0.147	0.0655	+/- 0.147	0.271	pCi/g						
Curium 243/244	U	0.0942	+/- 0.129	0.0474	+/- 0.130	0.196	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0325	+/- 0.0637	0.00	+/- 0.0638	0.0881	pCi/g		MXA	09/11/06	0919	565214	2
Plutonium 239/240	U	0.0013	+/- 0.0705	0.0582	+/- 0.0705	0.204	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	7.19	+/- 12.0	9.91	+/- 12.1	20.4	pCi/g		MXA	09/13/06	0019	565216	3
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	0.686	+/- 5.32	4.50	+/- 5.32	9.48	pCi/g		DFA1	09/05/06	1950	564447	4
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14	U	0.0572	+/- 0.114	0.0942	+/- 0.114	0.193	pCi/g		AXD2	09/09/06	0331	564449	5
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	7.27	+/- 37.9	25.6	+/- 37.9	53.2	pCi/g		MPX1	09/08/06	0137	565291	6
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	2.39	+/- 7.60	6.43	+/- 7.60	13.2	pCi/g		MPX1	09/09/06	0025	565293	7
<i>Liquid Scint Te99, Solid ALL FSS</i>													
Technetium 99	U	0.132	+/- 0.270	0.223	+/- 0.270	0.460	pCi/g		KXR1	09/06/06	1710	564445	8

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EPA 906.0 Modified
5	EPA EERF C 01 Modified
6	DOE RESL Fe 1, Modified
7	DOE RESL Ni 1, Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0015 018F  
Sample ID: 170683008

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
8	DOE EML HASL	300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	78	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	86	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	79	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	79	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	47	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	82	(15% 125%)

**Notes:**

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on an "as received" basis.

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0015 002F  
 Sample ID: 170683009  
 Matrix: SE  
 Collect Date: 28 JUN 06  
 Receive Date: 21 JUL 06  
 Collector: Client

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.292	+/- 0.213	0.0479	+/- 0.217	0.198	pCi/g	MXA	09/12/06	0844	565213	1	1
Curium 242	U	0.0522	+/- 0.102	0.00	+/- 0.103	0.141	pCi/g						
Curium 243/244	U	0.0289	+/- 0.0766	0.0341	+/- 0.0767	0.171	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0352	+/- 0.0798	0.0658	+/- 0.0798	0.231	pCi/g	MXA	09/11/06	0919	565214	2	1
Plutonium 239/240	U	0.019	+/- 0.0758	0.0465	+/- 0.0758	0.192	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	24.6	+/- 16.2	13.0	+/- 16.5	26.7	pCi/g	MXA	09/13/06	0106	565216	3	1
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	1.6	+/- 7.22	6.13	+/- 7.22	12.9	pCi/g	DFA1	09/05/06	2022	564447	4	
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14		0.207	+/- 0.113	0.0898	+/- 0.113	0.185	pCi/g	AXD2	09/09/06	0418	564449	5	
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	10.8	+/- 47.1	31.3	+/- 47.1	65.2	pCi/g	MXP1	09/11/06	1206	565291	6	
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	3.07	+/- 6.78	5.76	+/- 6.78	11.8	pCi/g	MXP1	09/09/06	0127	565293	7	
<i>Liquid Scint Te99, Solid ALL FSS</i>													
Technetium 99	U	0.390	+/- 0.283	0.227	+/- 0.283	0.468	pCi/g	KXR1	09/06/06	1726	564445	8	

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL 300, Am 05 RC Modified
2	DOE EML HASL 300, Pu 11 RC Modified
3	DOE EML HASL 300, Pu 11 RC Modified
4	EPA 906.0 Modified
5	EPA EERF C 01 Modified
6	DOE RESL Fe 1, Modified
7	DOE RESL Ni 1, Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 (843) 556 8171 www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0015 002F  
Sample ID: 170683009

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
8		DOE EML HASL 300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	78	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	79	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	75	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	74	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	55	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	80	(15% 125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on an "as received" basis.

**GENERAL ENGINEERING LABORATORIES, LLC**  
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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0001 132F  
 Sample ID: 170683010  
 Matrix: SE  
 Collect Date: 07 AUG 06  
 Receive Date: 17 AUG 06  
 Collector: Client  
 Moisture: 23.8%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium 241		0.160	+/- 0.147	0.0296	+/- 0.148	0.148	pCi/g		MXA	09/12/06	0844	565213	1
Curium 242	U	0.00	+/- 0.0754	0.00	+/- 0.0754	0.104	pCi/g						
Curium 243/244		0.132	+/- 0.130	0.00	+/- 0.131	0.0896	pCi/g						
<i>Alphaspec Pu, Solid ALL FSS</i>													
Plutonium 238	U	0.0279	+/- 0.0954	0.0976	+/- 0.0955	0.306	pCi/g		MXA	09/11/06	0919	565214	2
Plutonium 239/240	U	0.0591	+/- 0.0934	0.0903	+/- 0.0934	0.292	pCi/g						
<i>Liquid Scint Pu241, Solid ALL FSS</i>													
Plutonium 241	U	14.0	+/- 14.7	12.0	+/- 14.8	24.6	pCi/g		MXA	09/13/06	0153	565216	3
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid ALL FSS</i>													
Strontium 90	U	0.00619	+/- 0.0168	0.0131	+/- 0.0168	0.0311	pCi/g		KSD1	09/08/06	1932	565253	4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid HTD2, ALL FSS</i>													
Tritium	U	4.94	+/- 7.02	5.55	+/- 7.02	12.0	pCi/g		ATH2	09/07/06	0102	565650	5
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon 14		0.324	+/- 0.115	0.0889	+/- 0.115	0.183	pCi/g		AXD2	09/08/06	0456	565649	6
<i>Liquid Scint Fe55, Solid ALL FSS</i>													
Iron 55	U	1.92	+/- 38.0	25.9	+/- 38.0	53.9	pCi/g		MXP1	09/08/06	0210	565291	7
<i>Liquid Scint Ni63, Solid ALL FSS</i>													
Nickel 63	U	0.735	+/- 5.83	4.88	+/- 5.83	10.0	pCi/g		MXP1	09/09/06	0229	565293	8
<i>Liquid Scint Tc99, Solid ALL FSS</i>													
Technetium 99	U	0.0126	+/- 0.193	0.161	+/- 0.193	0.330	pCi/g		KXR1	09/12/06	1349	565648	9

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	JMB1	09/05/06	1736	565454

**The following Analytical Methods were performed**

Method	Description
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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424

Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: September 18, 2006

Client Sample ID: 9106 0001 132F  
Sample ID: 170683010

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
1	DOE EML HASL	300, Am	05 RC Modified									
2	DOE EML HASL	300, Pu	11 RC Modified									
3	DOE EML HASL	300, Pu	11 RC Modified									
4	EPA 905.0		Modified									
5	EPA 906.0		Modified									
6	EPA EERF C	01	Modified									
7	DOE RESL Fe	1, Modified										
8	DOE RESL Ni	1, Modified										
9	DOE EML HASL	300, Tc	02 RC Modified									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	87	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	66	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	66	(25% 125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	100	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	76	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	72	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	72	(15% 125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
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Report Date: September 18, 2006

Client Sample ID: 9106 0001 132F  
 Sample ID: 170683010

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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^ RPD of sample and duplicate evaluated using +/- RL. Concentrations are <5X the RL  
 h Preparation or preservation holding time was exceeded  
 The above sample is reported on a dry weight basis.



# QUALITY CONTROL DATA

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Report Date: September 18, 2006

Page 1 of 10

**Client :** Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

**Contact:** East Hampton, Connecticut  
Mr. Jack McCarthy

**Workorder:** 170683

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	565210										
QC1201175592	170683001	DUP									
Plutonium-238		U	-0.148	U	0.137	pCi/g	5180	(0% - 100%)	AXA1	09/11/06	09:19
		Uncert:	+/-0.269		+/-0.303						
		TPU:	+/-0.270		+/-0.304						
Plutonium-239/240		U	0.00321	U	-0.215	pCi/g	206	(0% - 100%)			
		Uncert:	+/-0.174		+/-0.181						
		TPU:	+/-0.174		+/-0.183						
QC1201175594	LCS										
Plutonium-238				U	-0.0564	pCi/g		(75%-125%)			
		Uncert:			+/-0.446						
		TPU:			+/-0.446						
Plutonium-239/240		12.3			9.42	pCi/g		77 (75%-125%)			
		Uncert:			+/-1.98						
		TPU:			+/-2.49						
QC1201175591	MB										
Plutonium-238				U	0.117	pCi/g					
		Uncert:			+/-0.220						
		TPU:			+/-0.221						
Plutonium-239/240				U	0.0802	pCi/g					
		Uncert:			+/-0.226						
		TPU:			+/-0.226						
QC1201175593	170683001	MS									
Plutonium-238		U	-0.148	U	0.110	pCi/g		(75%-125%)			
		Uncert:	+/-0.269		+/-0.175						
		TPU:	+/-0.270		+/-0.176						
Plutonium-239/240		12.5 U	0.00321		11.8	pCi/g		94 (75%-125%)			
		Uncert:	+/-0.174		+/-1.70						
		TPU:	+/-0.174		+/-2.29						
Batch	565213										
QC1201175603	170683004	DUP									
Americium-241			0.187		0.163	pCi/g	14	(0% - 100%)	AXA1	09/12/06	08:44
		Uncert:	+/-0.170		+/-0.149						
		TPU:	+/-0.172		+/-0.151						
Curium-242		U	-0.0387		0.143	pCi/g	348	(0% - 100%)			
		Uncert:	+/-0.0438		+/-0.162						
		TPU:	+/-0.0442		+/-0.163						
Curium-243/244		U	-0.00608	U	-0.0487	pCi/g	156	(0% - 100%)			
		Uncert:	+/-0.118		+/-0.0768						
		TPU:	+/-0.118		+/-0.0769						
QC1201175605	LCS										
Americium-241		13.5			12.8	pCi/g		95 (75%-125%)			
		Uncert:			+/-1.24						
		TPU:			+/-2.12						

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**QC Summary**

Workorder: 170683

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>										
Batch	565213									
Curium-242			U	0.00	pCi/g					
	Uncert:			+/-0.0625						
	TPU:			+/-0.0625						
Curium-243/244	16.4			15.1	pCi/g	92	(75%-125%)			
	Uncert:			+/-1.35						
	TPU:			+/-2.44						
QC1201175602 MB										
Americium-241			U	0.0812	pCi/g				09/12/06	08:44
	Uncert:			+/-0.107						
	TPU:			+/-0.108						
Curium-242			U	0.0664	pCi/g					
	Uncert:			+/-0.106						
	TPU:			+/-0.107						
Curium-243/244			U	-0.00886	pCi/g					
	Uncert:			+/-0.0744						
	TPU:			+/-0.0745						
QC1201175604 170683004 MS										
Americium-241	13.7	0.187		14.1	pCi/g	102	(75%-125%)		09/12/06	08:44
	Uncert:	+/-0.170		+/-1.41						
	TPU:	+/-0.172		+/-2.41						
Curium-242		U	-0.0387	0.209	pCi/g					
	Uncert:	+/-0.0438		+/-0.205						
	TPU:	+/-0.0442		+/-0.207						
Curium-243/244	16.7	U	-0.00608	16.2	pCi/g	97	(75%-125%)			
	Uncert:	+/-0.118		+/-1.52						
	TPU:	+/-0.118		+/-2.71						
Batch	565214									
QC1201175607 170683004 DUP										
Plutonium-238		U	-0.012	U	-0.0415	pCi/g	110	(0% - 100%)	MXA1	09/11/06 09:19
	Uncert:	+/-0.0236		+/-0.0941						
	TPU:	+/-0.0236		+/-0.0941						
Plutonium-239/240		U	-0.0601	U	-0.0311	pCi/g	64	(0% - 100%)		
	Uncert:	+/-0.0526		+/-0.0917						
	TPU:	+/-0.0531		+/-0.0917						
QC1201175609 LCS										
Plutonium-238			U	0.00142	pCi/g		(75%-125%)			
	Uncert:			+/-0.0772						
	TPU:			+/-0.0772						
Plutonium-239/240	12.5			10.7	pCi/g	86	(75%-125%)			
	Uncert:			+/-1.21						
	TPU:			+/-1.66						
QC1201175606 MB										
Plutonium-238			U	-0.0382	pCi/g					
	Uncert:			+/-0.113						
	TPU:			+/-0.113						
Plutonium-239/240			U	-0.0891	pCi/g					
	Uncert:			+/-0.066						
	TPU:			+/-0.0669						
QC1201175608 170683004 MS										

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**QC Summary**

Workorder: 170683

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	565214										
Plutonium-238		U	-0.012	U	0.0632	pCi/g		(75%-125%)			
		Uncert:	+/-0.0236		+/-0.143						
		TPU:	+/-0.0236		+/-0.143						
Plutonium-239/240	12.6	U	-0.0601		10.9	pCi/g	87	(75%-125%)			
		Uncert:	+/-0.0526		+/-1.20						
		TPU:	+/-0.0531		+/-1.66						
Batch	565216										
QC1201175615	170683004	DUP									
Plutonium-241		U	16.2	U	5.89	pCi/g	0	(0% - 100%)	AXA1	09/13/06	03:26
		Uncert:	+/-13.4		+/-12.7						
		TPU:	+/-13.5		+/-12.7						
QC1201175617	LCS										
Plutonium-241	341				310	pCi/g	91	(75%-125%)		09/12/06	11:26
		Uncert:			+/-32.9						
		TPU:			+/-45.2						
QC1201175614	MB										
Plutonium-241				U	5.70	pCi/g				09/13/06	02:39
		Uncert:			+/-12.7						
		TPU:			+/-12.7						
QC1201175616	170683004	MS									
Plutonium-241	344	U	16.2		341	pCi/g	99	(75%-125%)		09/12/06	11:10
		Uncert:	+/-13.4		+/-51.8						
		TPU:	+/-13.5		+/-66.7						
Batch	567705										
QC1201181288	170683003	DUP									
Americium-241		U	0.012		0.120	pCi/g	164	(0% - 100%)	TC1	09/14/06	09:31
		Uncert:	+/-0.0233		+/-0.0804						
		TPU:	+/-0.0234		+/-0.082						
Curium-242		U	-0.00814	U	0.00	pCi/g	200	(0% - 100%)			
		Uncert:	+/-0.0351		+/-0.0381						
		TPU:	+/-0.0351		+/-0.0381						
Curium-243/244		U	-0.00571	U	-0.0196	pCi/g	110	(0% - 100%)			
		Uncert:	+/-0.0246		+/-0.031						
		TPU:	+/-0.0246		+/-0.031						
QC1201181290	LCS										
Americium-241	5.23				5.41	pCi/g	103	(75%-125%)			
		Uncert:			+/-0.508						
		TPU:			+/-0.878						
Curium-242				U	0.00	pCi/g					
		Uncert:			+/-0.0244						
		TPU:			+/-0.0244						
Curium-243/244	6.31				6.40	pCi/g	101	(75%-125%)			
		Uncert:			+/-0.553						
		TPU:			+/-1.01						
QC1201181287	MB										
Americium-241				U	0.00039	pCi/g				09/14/06	09:31
		Uncert:			+/-0.00421						
		TPU:			+/-0.00421						

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**QC Summary**

Workorder: 170683

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	567705										
Curium-242			U	0.00902	pCi/g						
	Uncert:			+/-0.0239							
	TPU:			+/-0.0239							
Curium-243/244			U	-0.00283	pCi/g						
	Uncert:			+/-0.0238							
	TPU:			+/-0.0238							
QC1201181289	170683003	MS									
Americium-241	5.27	U	0.012	5.58	pCi/g		106	(75%-125%)		09/14/06	09:31
	Uncert:		+/-0.0233	+/-0.524							
	TPU:		+/-0.0234	+/-0.908							
Curium-242		U	-0.00814	U 0.0183	pCi/g						
	Uncert:		+/-0.0351	+/-0.0359							
	TPU:		+/-0.0351	+/-0.036							
Curium-243/244	6.41	U	-0.00571	7.36	pCi/g		115	(75%-125%)			
	Uncert:		+/-0.0246	+/-0.603							
	TPU:		+/-0.0246	+/-1.15							
Batch	567883										
QC1201181752	170683001	DUP									
Plutonium-241		U	9.87	U -3.06	pCi/g	0		(0% - 100%)	TC1	09/17/06	03:51
	Uncert:		+/-11.1	+/-10.4							
	TPU:		+/-11.1	+/-10.4							
QC1201181754	LCS										
Plutonium-241	135			120	pCi/g		89	(75%-125%)		09/17/06	04:24
	Uncert:			+/-16.2							
	TPU:			+/-19.8							
QC1201181751	MB										
Plutonium-241				U 1.78	pCi/g					09/17/06	03:35
	Uncert:			+/-9.61							
	TPU:			+/-9.61							
QC1201181753	170683001	MS									
Plutonium-241	142	U	9.87	113	pCi/g		80	(75%-125%)		09/17/06	04:08
	Uncert:		+/-11.1	+/-15.8							
	TPU:		+/-11.1	+/-19.1							
<b>Rad Gas Flow</b>											
Batch	565250										
QC1201175680	170683002	DUP									
Strontium-90		U	-0.00415	U 0.000131	pCi/g	0		(0% - 100%)	KSD1	09/08/06	18:03
	Uncert:		+/-0.016	+/-0.0253							
	TPU:		+/-0.016	+/-0.0253							
QC1201175682	LCS										
Strontium-90	1.56			1.63	pCi/g		105	(75%-125%)		09/08/06	18:05
	Uncert:			+/-0.151							
	TPU:			+/-0.155							
QC1201175679	MB										
Strontium-90				U -0.00458	pCi/g					09/08/06	18:03
	Uncert:			+/-0.018							
	TPU:			+/-0.018							
QC1201175681	170683002	MS									
Strontium-90	3.13	U	-0.00415	2.38	pCi/g		76	(75%-125%)		09/08/06	18:03

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**QC Summary**

Workorder: 170683

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	565250										
		Uncert:	+/-0.016								+/-0.249
		TPU:	+/-0.016								+/-0.253
Batch	565253										
QC1201175687	170683005	DUP									
Strontium-90		U	-0.000759	U	-0.000963	pCi/g	0	(0% - 100%)	KSD1	09/08/06	19:32
		Uncert:	+/-0.0157								+/-0.0166
		TPU:	+/-0.0157								+/-0.0166
QC1201175689	LCS										
Strontium-90			1.57		1.20	pCi/g	77	(75%-125%)		09/09/06	12:26
		Uncert:			+/-0.113						
		TPU:			+/-0.118						
QC1201175686	MB										
Strontium-90				U	-0.0216	pCi/g				09/08/06	19:32
		Uncert:			+/-0.00992						
		TPU:			+/-0.00992						
QC1201175688	170683005	MS									
Strontium-90		U	3.14	-0.000759	2.77	pCi/g	88	(75%-125%)		09/08/06	19:31
		Uncert:		+/-0.0157	+/-0.189						
		TPU:		+/-0.0157	+/-0.205						
<b>Rad Liquid Scintillation</b>											
Batch	564445										
QC1201173841	170544018	DUP									
Technetium-99		U	0.128	U	0.0496	pCi/g	0	(0% - 100%)	KXR1	09/06/06	17:59
		Uncert:			+/-0.251						
		TPU:			+/-0.251						
QC1201173843	LCS										
Technetium-99			12.7		13.0	pCi/g	103	(75%-125%)		09/06/06	18:32
		Uncert:			+/-0.501						
		TPU:			+/-0.582						
QC1201173840	MB										
Technetium-99				U	0.0991	pCi/g				09/06/06	17:43
		Uncert:			+/-0.243						
		TPU:			+/-0.243						
QC1201173842	170544018	MS									
Technetium-99		U	13.1	0.128	13.3	pCi/g	102	(75%-125%)		09/06/06	18:15
		Uncert:		+/-0.272	+/-0.540						
		TPU:		+/-0.272	+/-0.620						
Batch	564447										
QC1201173845	170544018	DUP									
Tritium		U	1.53	U	0.760	pCi/g	0	(0% - 100%)	DFA1	09/05/06	21:25
		Uncert:			+/-5.24						
		TPU:			+/-5.24						
QC1201173847	LCS										
Tritium			46.9		44.3	pCi/g	95	(75%-125%)		09/07/06	11:21
		Uncert:			+/-8.94						
		TPU:			+/-8.98						
QC1201173844	MB										
Tritium				U	-0.43	pCi/g				09/05/06	20:54

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**QC Summary**

Workorder: 170683

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	564447										
		Uncert:		+/-4.67							
		TPU:		+/-4.67							
QC1201173846	170544018	MS									
Tritium	54.5	U	1.53	57.4	pCi/g		105	(75%-125%)		09/07/06	11:05
		Uncert:	+/-6.54	+/-10.7							
		TPU:	+/-6.54	+/-10.7							
Batch	564449										
QC1201173849	170544019	DUP									
Carbon-14		U	-0.0997	U -0.0804	pCi/g	0		(0% - 100%)	AXD2	09/09/06	05:04
		Uncert:	+/-0.0966	+/-0.108							
		TPU:	+/-0.0966	+/-0.108							
QC1201173851	LCS										
Carbon-14	6.66			6.26	pCi/g		94	(75%-125%)		09/06/06	13:38
		Uncert:		+/-0.258							
		TPU:		+/-0.276							
QC1201173848	MB										
Carbon-14				U -0.0326	pCi/g					09/06/06	12:02
		Uncert:		+/-0.102							
		TPU:		+/-0.102							
QC1201173850	170544019	MS									
Carbon-14	6.86	U	-0.0997	6.85	pCi/g		100	(75%-125%)		09/06/06	13:07
		Uncert:	+/-0.0966	+/-0.273							
		TPU:	+/-0.0966	+/-0.293							
Batch	564514										
QC1201174039	170683006	DUP									
Tritium		U	3.44	U 1.46	pCi/g	0		(0% - 100%)	DFA1	09/05/06	14:33
		Uncert:	+/-6.25	+/-5.79							
		TPU:	+/-6.25	+/-5.79							
QC1201174041	LCS										
Tritium	48.4			53.7	pCi/g		111	(75%-125%)		09/05/06	15:36
		Uncert:		+/-7.25							
		TPU:		+/-7.31							
QC1201174038	MB										
Tritium				U 0.308	pCi/g					09/05/06	14:01
		Uncert:		+/-4.66							
		TPU:		+/-4.66							
QC1201174040	170683006	MS									
Tritium	49.1	U	3.44	61.1	pCi/g		124	(75%-125%)		09/05/06	15:05
		Uncert:	+/-6.25	+/-7.58							
		TPU:	+/-6.25	+/-7.65							
Batch	564520										
QC1201174057	170683007	DUP									
Carbon-14		U	0.0995	U 0.0741	pCi/g	0		(0% - 100%)	AXD2	09/06/06	10:24
		Uncert:	+/-0.0918	+/-0.118							
		TPU:	+/-0.0918	+/-0.118							
QC1201174059	LCS										
Carbon-14	6.58			6.51	pCi/g		99	(75%-125%)		09/06/06	11:28
		Uncert:		+/-0.263							
		TPU:		+/-0.282							

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**QC Summary**

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	564520										
QC1201174056	MB										
Carbon-14			U	-0.0231	pCi/g					09/06/06	09:53
		Uncert:		+/-0.105							
		TPU:		+/-0.105							
QC1201174058	170683007	MS									
Carbon-14		7.19	U	0.0995	6.42	pCi/g	89	(75%-125%)		09/06/06	10:56
		Uncert:		+/-0.0918	+/-0.276						
		TPU:		+/-0.0918	+/-0.293						
Batch	564623										
QC1201174254	170683001	DUP									
Technetium-99			U	0.341	U	0.187	pCi/g	0	(0% - 100%)	KXR1	09/08/06 19:42
		Uncert:		+/-0.291	+/-0.211						
		TPU:		+/-0.291	+/-0.211						
QC1201174256	LCS										
Technetium-99		13.0			12.2	pCi/g	94	(75%-125%)		09/06/06	14:43
		Uncert:			+/-0.490						
		TPU:			+/-0.566						
QC1201174253	MB										
Technetium-99			U	0.151	pCi/g					09/06/06	13:54
		Uncert:		+/-0.247							
		TPU:		+/-0.247							
QC1201174255	170683001	MS									
Technetium-99		13.0	U	0.341	12.9	pCi/g	99	(75%-125%)		09/06/06	14:27
		Uncert:		+/-0.291	+/-0.547						
		TPU:		+/-0.291	+/-0.623						
Batch	565287										
QC1201175809	170683006	DUP									
Iron-55			U	-12.6	U	38.3	pCi/g	0	(0% - 100%)	MXP1	09/07/06 23:59
		Uncert:		+/-44.5	+/-41.2						
		TPU:		+/-44.5	+/-41.2						
QC1201175811	LCS										
Iron-55		628			613	pCi/g	98	(75%-125%)		09/08/06	00:31
		Uncert:			+/-56.2						
		TPU:			+/-67.5						
QC1201175808	MB										
Iron-55			U	10.2	pCi/g					09/07/06	23:42
		Uncert:		+/-35.9							
		TPU:		+/-35.9							
QC1201175810	170683006	MS									
Iron-55		746	U	-12.6	675	pCi/g	91	(75%-125%)		09/10/06	15:07
		Uncert:		+/-44.5	+/-60.5						
		TPU:		+/-44.5	+/-73.4						
Batch	565289										
QC1201175815	170683006	DUP									
Nickel-63			U	4.82	U	6.11	pCi/g	0	(0% - 100%)	MXP1	09/08/06 03:13
		Uncert:		+/-7.80	+/-9.03						
		TPU:		+/-7.80	+/-9.03						
QC1201175817	LCS										
Nickel-63		512			443	pCi/g	87	(75%-125%)		09/08/06	04:16



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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	565289										
		Uncert:		+/-15.2							
		TPU:		+/-20.8							
QC1201175814	MB										
Nickel-63			U	5.67	pCi/g					09/08/06	02:41
		Uncert:		+/-7.44							
		TPU:		+/-7.44							
QC1201175816	170683006	MS									
Nickel-63		572	U	4.82	pCi/g		83	(75%-125%)		09/08/06	03:44
		Uncert:		+/-7.80							
		TPU:		+/-7.80							
Batch	565291										
QC1201175819	170683004	DUP									
Iron-55			U	33.7	pCi/g	0		(0% - 100%)	MXP1	09/08/06	02:42
		Uncert:		+/-51.9							
		TPU:		+/-52.0							
QC1201175821	LCS										
Iron-55		628		652	pCi/g		104	(75%-125%)		09/08/06	03:15
		Uncert:		+/-52.2							
		TPU:		+/-64.9							
QC1201175818	MB										
Iron-55			U	-26.7	pCi/g					09/08/06	02:26
		Uncert:		+/-35.6							
		TPU:		+/-35.6							
QC1201175820	170683004	MS									
Iron-55		711	U	33.7	pCi/g		105	(75%-125%)		09/08/06	02:59
		Uncert:		+/-51.9							
		TPU:		+/-52.0							
Batch	565293										
QC1201175823	170683004	DUP									
Nickel-63			U	0.395	pCi/g	0		(0% - 100%)	MXP1	09/09/06	04:34
		Uncert:		+/-9.40							
		TPU:		+/-9.40							
QC1201175825	LCS										
Nickel-63		512		467	pCi/g		91	(75%-125%)		09/09/06	06:38
		Uncert:		+/-15.4							
		TPU:		+/-21.5							
QC1201175822	MB										
Nickel-63			U	-2.47	pCi/g					09/09/06	03:32
		Uncert:		+/-5.58							
		TPU:		+/-5.58							
QC1201175824	170683004	MS									
Nickel-63		531	U	0.395	pCi/g		101	(75%-125%)		09/09/06	05:36
		Uncert:		+/-9.40							
		TPU:		+/-9.40							
Batch	565648										
QC1201176787	170683010	DUP									
Technetium-99			U	0.0126	pCi/g	0		(0% - 100%)	KXR1	09/12/06	14:53
		Uncert:		+/-0.193							
		TPU:		+/-0.193							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>										
Batch	565648									
QC1201176789	LCS									
Technetium-99	13.1		13.2	pCi/g		101	(75%-125%)		09/12/06	15:56
	Uncert:		+/-0.349							
	TPU:		+/-0.480							
QC1201176786	MB									
Technetium-99		U	0.00238	pCi/g					09/12/06	14:21
	Uncert:		+/-0.154							
	TPU:		+/-0.154							
QC1201176788	170683010 MS									
Technetium-99	13.0	U	0.0126	pCi/g		93	(75%-125%)		09/12/06	15:24
	Uncert:		+/-0.193							
	TPU:		+/-0.193							
Batch	565649									
QC1201176791	170683010 DUP									
Carbon-14			0.324	pCi/g	46		(0% - 100%)	AXD2	09/08/06	07:38
	Uncert:		+/-0.115							
	TPU:		+/-0.115							
QC1201176793	LCS									
Carbon-14	7.27		8.39	pCi/g		115	(75%-125%)		09/08/06	09:12
	Uncert:		+/-0.256							
	TPU:		+/-0.288							
QC1201176790	MB									
Carbon-14		U	0.0136	pCi/g					09/08/06	06:51
	Uncert:		+/-0.109							
	TPU:		+/-0.109							
QC1201176792	170683010 MS									
Carbon-14	7.22		0.324	pCi/g		94	(75%-125%)		09/08/06	08:25
	Uncert:		+/-0.115							
	TPU:		+/-0.115							
Batch	565650									
QC1201176795	170683010 DUP									
Tritium		U	4.94	pCi/g	0		(0% - 100%)	ATH2	09/07/06	01:36
	Uncert:		+/-7.02							
	TPU:		+/-7.02							
QC1201176797	LCS									
Tritium	64.5		64.9	pCi/g		101	(75%-125%)		09/07/06	02:09
	Uncert:		+/-10.8							
	TPU:		+/-10.8							
QC1201176794	MB									
Tritium		U	4.55	pCi/g					09/07/06	01:19
	Uncert:		+/-6.87							
	TPU:		+/-6.87							
QC1201176796	170683010 MS									
Tritium	64.7	U	4.94	pCi/g		104	(75%-125%)		09/07/06	01:52
	Uncert:		+/-7.02							
	TPU:		+/-7.02							

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Parname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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Notes:

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.


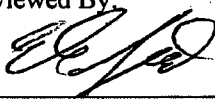
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

DISCHARGE CANAL  
SURVEY UNIT 9106-0015  
RELEASE RECORD

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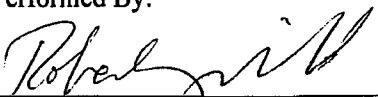
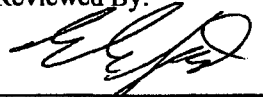
Attachment 2b  
Split Sample Assessment Forms  
(3 Pages)

**Split Sample Assessment Form**

Survey Area #: 9106	Survey Unit #: 15	Survey Unit Name: Discharge Canal						
Sample Plan or WPIR#: 2006-021					SML #: 9106-0015-005FS			
Sample Description: Comparison of split samples collected from sample measurement location #05 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9106-0015-005F</u> the comparison sample was <u>9106-0015-005FS</u> .								
STANDARD					COMPARISON			
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	5.89E-02	1.68E-02	4	0.5 2.00	2.22E-01	2.19E-02	3.77	N
Co-60	9.29E-04	1.40E-02	0	NONE	6.32E-02	1.83E-02	68.03	N/A
Sr-90	1.33E-02	9.00E-03	1	NONE	1.49E-02	9.95E-03	1.12	N/A
K-40	1.42E+01	5.20E-01	27	0.75 1.33	1.49E+01	6.00E-01	1.05	Y
Comments/Corrective Actions: In consideration of the Co-60 & Sr-90 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. Since Cs-137 has a likelihood to be tightly bound to organic mater in the sample matrix, one would not neccessarily expect it to be homogenously mixed if processing of the sample-split aliquot is not effective in dispersing organic material uniformly through the sample aliquot. Since K-40 was found to be present at an acceptable level of agreement, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.			
					Resolution		Agreement Range	
4		7		0.50		2.00		
8		15		0.60		1.66		
16		50		0.75		1.33		
51		200		0.80		1.25		
> 200				0.85		1.18		
Performed By:			Date:		Reviewed By:		Date:	
			11-13-06				11/13/06	

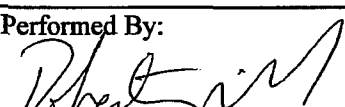
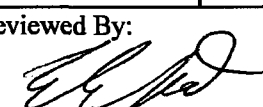
WPIR – Work Plan and Inspection Record  
SML – Sample Measurement Location designation

**Split Sample Assessment Form**

Survey Area#:	9106	Survey Unit #:	15	Survey Unit Name:	Discharge Canal				
Sample Plan or WPIR#:					2006-0021				
					SML #: 9106-0015-012FS				
Sample Description: Comparison of split samples collected from sample measurement location #12 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9106-0015-012E</u> , the comparison sample was <u>9106-0015-012FS</u> .									
STANDARD					COMPARISON				
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)	
Cs-137	3.47E-01	2.32E-02	15	0.6 1.66	3.28E-01	3.17E-02	0.95	Y	
Co-60	6.55E-01	3.79E-02	17	0.75 1.33	6.26E-01	4.11E-02	0.96	Y	
Sr-90	3.27E-03	8.00E-03	0	NONE	8.15E-03	7.35E-03	2.49	N/A	
K-40	1.18E+01	4.41E-01	27	0.75 1.33	1.24E+01	6.30E-01	1.05	Y	
Comments/Corrective Actions: In consideration of the Sr-90 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. Since Cs-137, Co-60 and K-40 was found to be present at an acceptable level of agreement, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.				
					4	7	0.50	2.00	
					8	15	0.60	1.66	
					16	50	0.75	1.33	
					51	200	0.80	1.25	
					> 200		0.85	1.18	
Performed By:			Date:		Reviewed By:			Date:	
			11-13-06					11/13/06	

WPIR – Work Plan and Inspection Record  
SML – Sample Measurement Location designation

**Split Sample Assessment Form**

Survey Area#:	9106	Survey Unit #:	15	Survey Unit Name:	Discharge Canal																														
Sample Plan or WPIR#:					2006-0021				SML #:	9106-0015-018FS																									
Sample Description: Comparison of split samples collected from sample measurement location #18 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9106-0015-018F, the comparison sample was 9106-0015-018FS.																																			
STANDARD						COMPARISON																													
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range		Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)																										
Cs-137	3.54E-01	2.76E-02	13	0.60	1.66	3.98E-01	4.93E-02	1.12	Y																										
Co-60	1.16E+00	5.00E-02	23	0.75	1.33	1.09E+00	6.00E-02	0.94	Y																										
Sr-90	-1.15E-02	6.80E-03	-2	NONE		1.46E-02	9.10E-03	-1.27	N/A																										
K-40	1.27E+01	5.45E-01	23	0.75	1.33	1.32E+01	7.70E-01	1.04	Y																										
<p>Comments/Corrective Actions: In consideration of the Sr-90 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. Since Cs-137, Co-60 and K-40 was found to be present at an acceptable level of agreement, no further action is warranted.</p>						<p>Table is provided to show acceptance criteria used to assess split samples.</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th colspan="2">Resolution</th> <th colspan="2">Agreement Range</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>7</td> <td>0.50</td> <td>2.00</td> </tr> <tr> <td>8</td> <td>15</td> <td>0.60</td> <td>1.66</td> </tr> <tr> <td>16</td> <td>50</td> <td>0.75</td> <td>1.33</td> </tr> <tr> <td>51</td> <td>200</td> <td>0.80</td> <td>1.25</td> </tr> <tr> <td>&gt; 200</td> <td></td> <td>0.85</td> <td>1.18</td> </tr> </tbody> </table>						Resolution		Agreement Range		4	7	0.50	2.00	8	15	0.60	1.66	16	50	0.75	1.33	51	200	0.80	1.25	> 200		0.85	1.18
Resolution		Agreement Range																																	
4	7	0.50	2.00																																
8	15	0.60	1.66																																
16	50	0.75	1.33																																
51	200	0.80	1.25																																
> 200		0.85	1.18																																
Performed By:				Date:		Reviewed By:				Date:																									
				11-13-06						11/13/06																									

WPIR – Work Plan and Inspection Record  
SML – Sample Measurement Location designation

DISCHARGE CANAL  
SURVEY UNIT 9106-0015  
RELEASE RECORD

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Attachment 2c  
Preliminary Data Forms  
(2 Pages)



**Preliminary Data Review Form - Samples for the Sign Test**

Survey Unit: 9106- 15  
 Survey Unit Name: Discharge Canal  
 Classification: 2  
 Survey Media: Water  
 Type of Survey: Final Status Survey  
 Type of Measurement: Radionuclide Specific  
 Number of Measurements: 28  
 Operational DCGL: 1

**BASIC STATISTICAL QUANTITIES**

	Cs-137	Co-60	Sr-90
RANGE Minimum Value:	-8.56E-03	-3.79E-03	-1.88E-02
Maximum Value:	5.22E-01	1.16E+00	2.52E-02
Mean:	2.26E-01	2.96E-01	5.37E-03
Median:	2.63E-01	1.41E-01	4.75E-03
Standard Deviation:	1.69E-01	3.57E-01	1.25E-02

**RADIONUCLIDE CONCENTRATION (pCi/g)**

NUMBER	Cs-137	Co-60	Sr-90
9106-0015-001F	2.56E-02	1.20E-02	2.48E-02
9106-0015-002F	5.22E-01	1.11E+00	-1.88E-02
9106-0015-003F	4.67E-02	1.42E-01	-3.33E-03
9106-0015-004F	-8.56E-03	9.74E-03	1.98E-02
9106-0015-005F	5.89E-02	9.29E-04	1.33E-02
9106-0015-006F	3.22E-01	3.50E-01	8.64E-03
9106-0015-007F	2.85E-01	3.55E-01	2.98E-03
9106-0015-008F	2.15E-01	3.49E-01	1.05E-02
9106-0015-009F	1.19E-02	3.23E-02	1.55E-02
9106-0015-010F	2.53E-01	0.00E+00	3.71E-03
9106-0015-011F	4.93E-01	3.96E-01	1.88E-02
9106-0015-012F	3.47E-01	6.55E-01	3.27E-03
9106-0015-013F	4.43E-01	7.05E-01	5.00E-03
9106-0015-014F	4.43E-02	4.32E-02	2.22E-02
9106-0015-015F	2.08E-01	7.07E-02	2.11E-02
9106-0015-016F	3.02E-01	1.01E-01	-2.59E-03
9106-0015-017F	4.74E-01	2.90E-01	4.49E-03
9106-0015-018F	3.54E-01	1.16E+00	-1.15E-02
9106-0015-019F	9.01E-02	2.38E-01	9.59E-03
9106-0015-020F	9.79E-02	2.03E-01	-8.28E-03
9106-0015-021F	3.98E-01	0.00E+00	-1.17E-02
9106-0015-022F	3.46E-01	6.97E-01	2.53E-03
9106-0015-023F	3.28E-01	1.06E+00	-1.20E-02
9106-0015-024F	6.71E-02	1.15E-01	2.52E-02

9106-0015-025F	1.17E-02	-3.63E-03	1.28E-02
9106-0015-026F	3.23E-01	5.75E-02	6.51E-03
9106-0015-027F	2.73E-01	1.39E-01	3.14E-03
9106-0015-028F	4.90E-03	-3.79E-03	-1.53E-02

Performed By: *Oak Kendall*

Date: 11-13-06

Independent Review: *Robert J. M.*

Date: 11-13-06

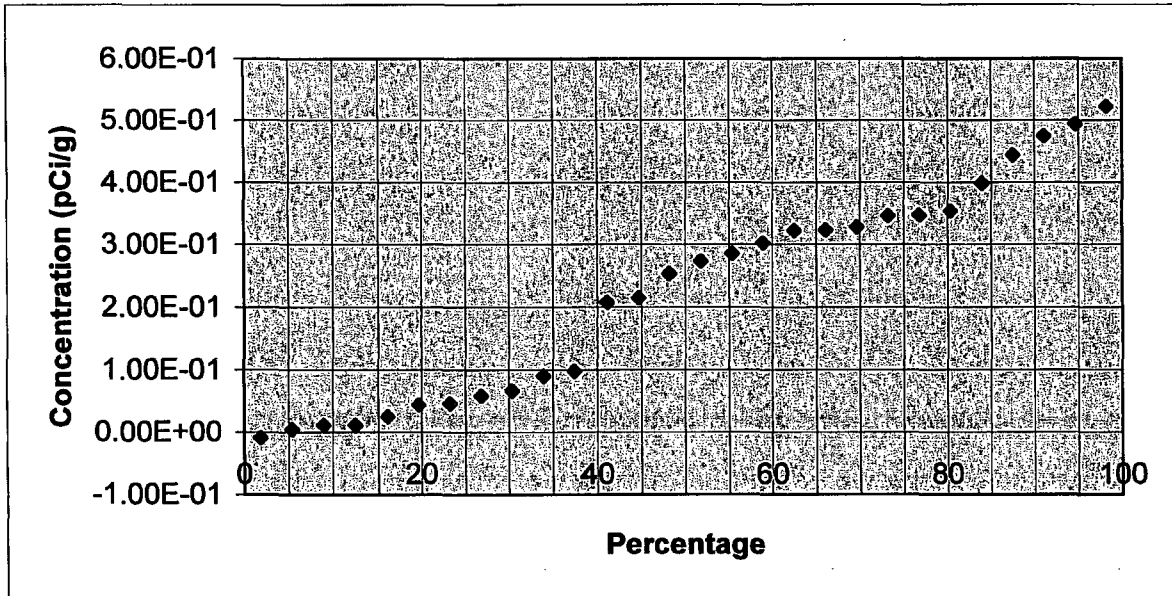
DISCHARGE CANAL  
SURVEY UNIT 9106-0015  
RELEASE RECORD

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Attachment 2d  
Graphical Representation of Data  
(6 Pages)

**Quantile Plot For Cesium - 137**

Survey Unit: 9106-15  
 Survey Unit Name: Discharge Canal  
 Mean: 2.26E-01 pCi/g



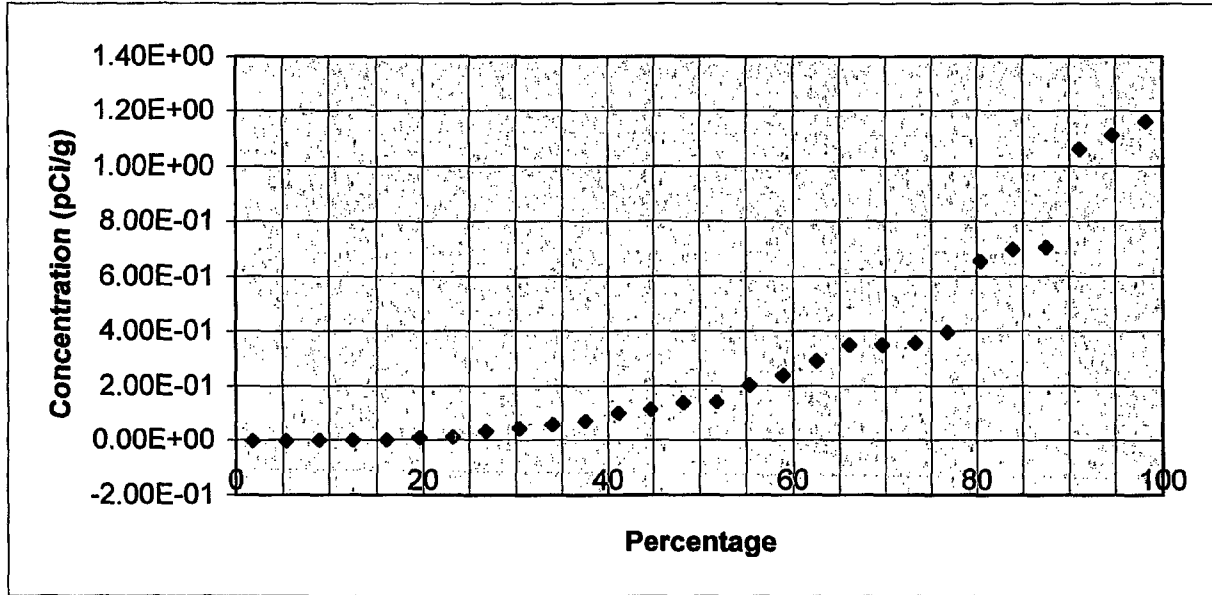
Cs-137	Rank	Percentage	Cs-137	Rank	Percentage
-8.56E-03	1	2 %	2.73E-01	15	52 %
4.90E-03	2	5 %	2.85E-01	16	55 %
1.17E-02	3	9 %	3.02E-01	17	59 %
1.19E-02	4	13 %	3.22E-01	18	63 %
2.56E-02	5	16 %	3.23E-01	19	66 %
4.43E-02	6	20 %	3.28E-01	20	70 %
4.67E-02	7	23 %	3.46E-01	21	73 %
5.89E-02	8	27 %	3.47E-01	22	77 %
6.71E-02	9	30 %	3.54E-01	23	80 %
9.01E-02	10	34 %	3.98E-01	24	84 %
9.79E-02	11	38 %	4.43E-01	25	88 %
2.08E-01	12	41 %	4.74E-01	26	91 %
2.15E-01	13	45 %	4.93E-01	27	95 %
2.53E-01	14	48 %	5.22E-01	28	98 %

Prepared By: Robert [Signature]  
 Reviewed By: [Signature]

Date: 11-13-06  
 Date: 11/13/06

**Quantile Plot For Cobalt - 60**

Survey Unit: 9106-15  
 Survey Unit Name: Discharge Canal  
 Mean: 2.96E-01 pCi/g



Co-60	Rank	Percentage	Co-60	Rank	Percentage
-3.79E-03	1	2 %	1.42E-01	15	52 %
-3.63E-03	2	5 %	2.03E-01	16	55 %
0.00E+00	3	9 %	2.38E-01	17	59 %
0.00E+00	4	13 %	2.90E-01	18	63 %
9.29E-04	5	16 %	3.49E-01	19	66 %
9.74E-03	6	20 %	3.50E-01	20	70 %
1.20E-02	7	23 %	3.55E-01	21	73 %
3.23E-02	8	27 %	3.96E-01	22	77 %
4.32E-02	9	30 %	6.55E-01	23	80 %
5.75E-02	10	34 %	6.97E-01	24	84 %
7.07E-02	11	38 %	7.05E-01	25	88 %
1.01E-01	12	41 %	1.06E+00	26	91 %
1.15E-01	13	45 %	1.11E+00	27	95 %
1.39E-01	14	48 %	1.16E+00	28	98 %

Prepared By: Oil Pentall

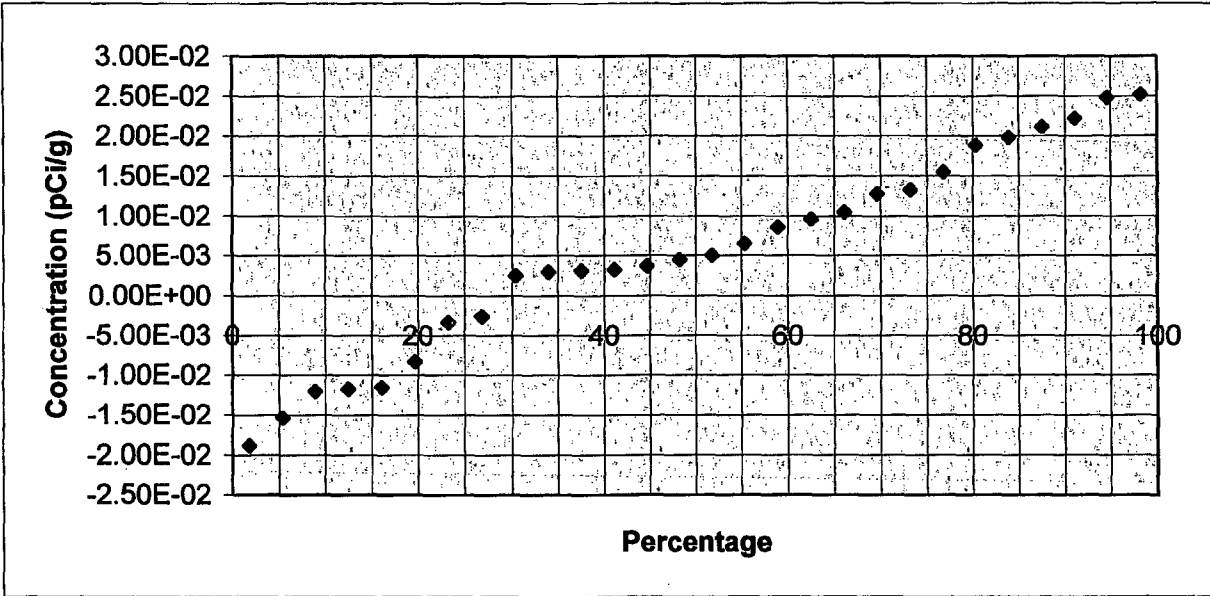
Date: 2-26-07

Reviewed By: F. Messersmith

Date: 2-26-07

**Quantile Plot For Strontium - 90**

Survey Unit: 9106-15  
 Survey Unit Name: Discharge Canal  
 Mean: 5.37E-03 pCi/g



Sr-90	Rank	Percentage	Sr-90	Rank	Percentage
-1.88E-02	1	2 %	5.00E-03	15	52 %
-1.53E-02	2	5 %	6.51E-03	16	55 %
-1.20E-02	3	9 %	8.64E-03	17	59 %
-1.17E-02	4	13 %	9.59E-03	18	63 %
-1.15E-02	5	16 %	1.05E-02	19	66 %
-8.28E-03	6	20 %	1.28E-02	20	70 %
-3.33E-03	7	23 %	1.33E-02	21	73 %
-2.59E-03	8	27 %	1.55E-02	22	77 %
2.53E-03	9	30 %	1.88E-02	23	80 %
2.98E-03	10	34 %	1.98E-02	24	84 %
3.14E-03	11	38 %	2.11E-02	25	88 %
3.27E-03	12	41 %	2.22E-02	26	91 %
3.71E-03	13	45 %	2.48E-02	27	95 %
4.49E-03	14	48 %	2.52E-02	28	98 %

Prepared By: *Oil Penhall*

Date: 2-26-07

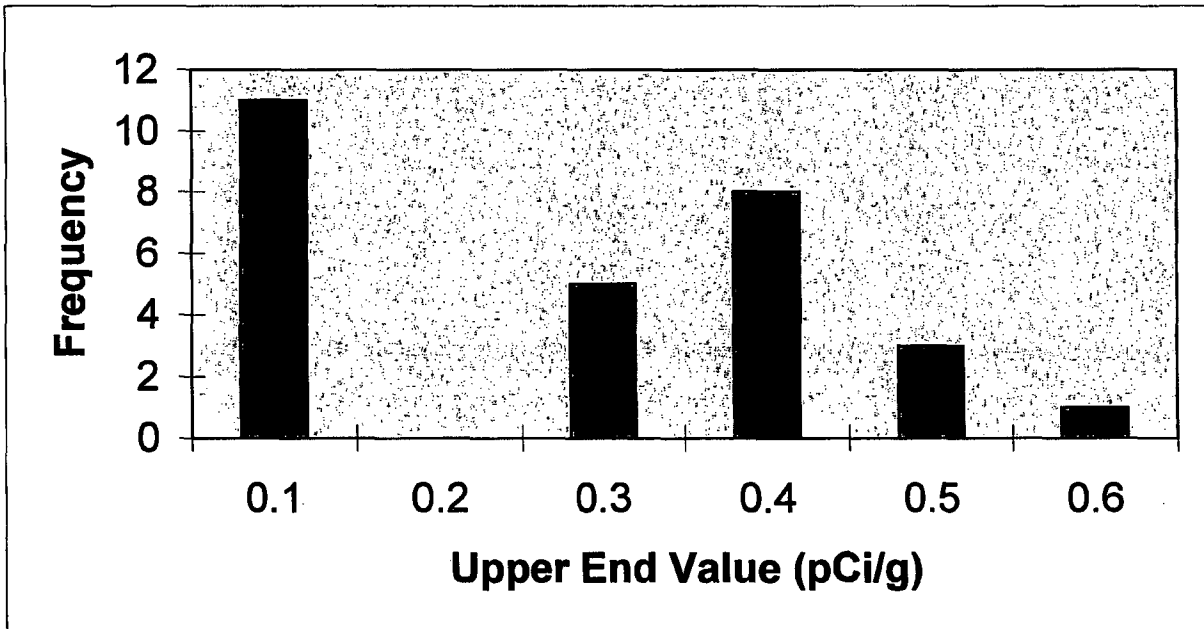
Reviewed By: *R. Massengill*

Date: 2-26-07

**Frequency Plot For Cesium - 137**

Survey Unit: 9106-15  
 Survey Unit Name: Discharge Canal

Mean: 0.226 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.1	11	39%
0.2	0	0%
0.3	5	18%
0.4	8	29%
0.5	3	11%
0.6	1	4%
Total	28	100%

Prepared By: *Dal Penhall*

Date: 11-13-06

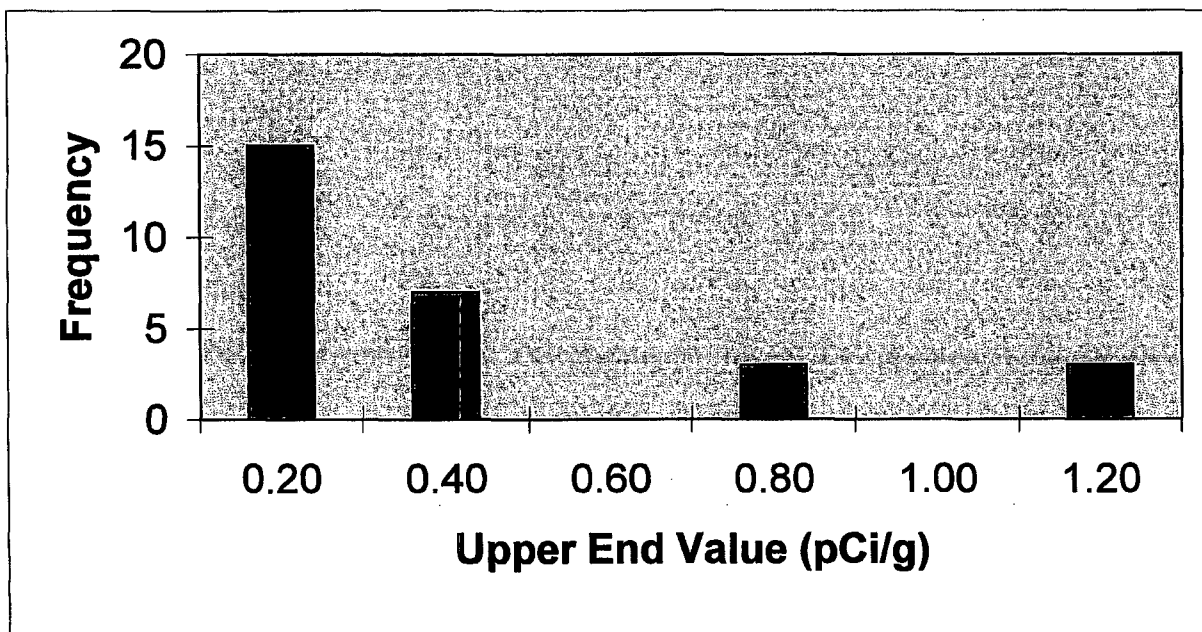
Reviewed By: *Robert J. M.*

Date: 11-13-06

**Frequency Plot For Cobalt - 60**

Survey Unit: 9106-15  
 Survey Unit Name: Discharge Canal

Mean: 0.296 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.20	15	47%
0.40	7	22%
0.60	0	0%
0.80	3	9%
1.00	0	0%
1.20	3	9%
Total	28	88%

Prepared By: Robert J. M.

Date: 11-13-06

Reviewed By: E. E. J.

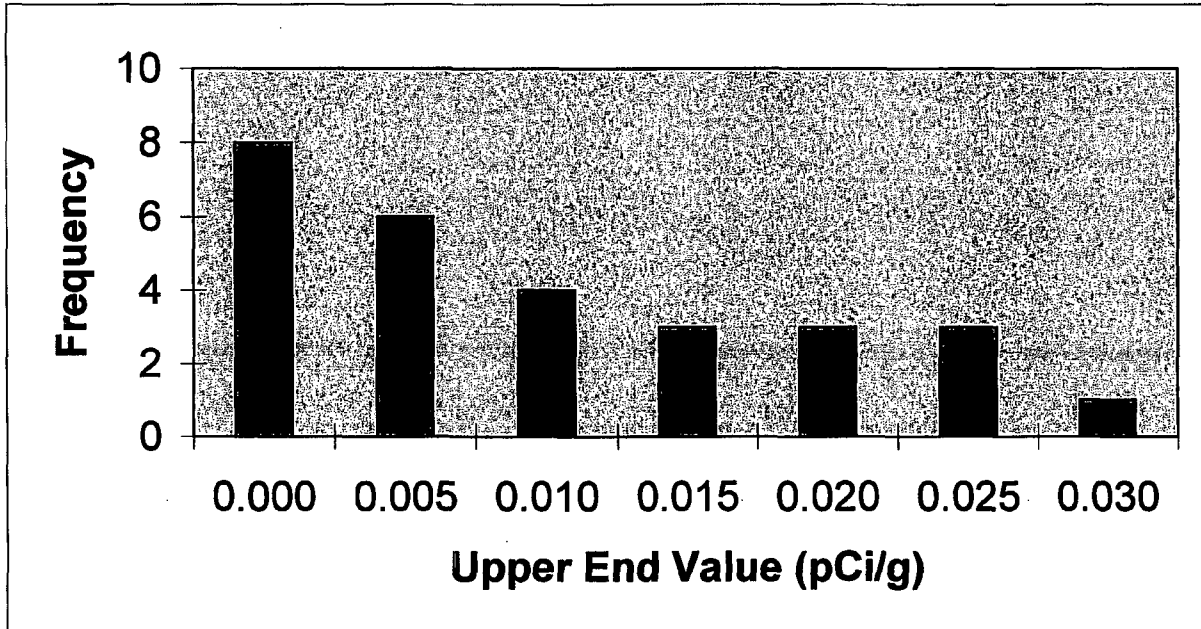
Date: 11/13/06



**Frequency Plot For Strontium - 90**

Survey Unit: 9106-15  
 Survey Unit Name: Discharge Canal

Mean: 0.005 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.000	8	25%
0.005	6	19%
0.010	4	13%
0.015	3	9%
0.020	3	9%
0.025	3	9%
0.030	1	3%
Total	28	88%

Prepared By: Robert [Signature]

Date: 11-13-06

Reviewed By: [Signature]

Date: 11/13/06

DISCHARGE CANAL  
SURVEY UNIT 9106-0015  
RELEASE RECORD

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Attachment 2e  
Sign Test Calculation  
(2 Pages)

**Sign Test Calculation Sheet For Multiple Radionuclides**

Survey Unit Number: 9106-15															
Survey Unit Name: Discharge Canal															
WP&IR#: 2006-021															
Classification : 1		TYPE I ( $\alpha$ error):0.05		TYPE I ( $\beta$ error):0.05											
<table border="1"> <thead> <tr> <th>Radionuclides:</th> <th>Cs-137</th> <th>Co-60</th> <th>Sr-90</th> <th>HTDs</th> </tr> </thead> <tbody> <tr> <td>Survey Design DCGL (pCi/g):</td> <td>6.01</td> <td>2.9</td> <td>1.18</td> <td>1</td> </tr> </tbody> </table>						Radionuclides:	Cs-137	Co-60	Sr-90	HTDs	Survey Design DCGL (pCi/g):	6.01	2.9	1.18	1
Radionuclides:	Cs-137	Co-60	Sr-90	HTDs											
Survey Design DCGL (pCi/g):	6.01	2.9	1.18	1											
Results Cs-137	Results Co-60	Results Sr-90	Results other HTDs	DCGL-Result	Sign										
2.56E-02	1.20E-02	2.48E-02	3.10E-02	9.40E-01	1										
5.22E-01	1.11E+00	-1.88E-02	1.41E-01	4.05E-01	1										
4.67E-02	1.42E-01	-3.33E-03	3.10E-02	9.15E-01	1										
-8.56E-03	9.74E-03	1.98E-02	1.90E-03	9.80E-01	1										
5.89E-02	9.29E-04	1.33E-02	3.10E-02	9.48E-01	1										
3.22E-01	3.50E-01	8.64E-03	3.10E-02	7.87E-01	1										
2.85E-01	3.55E-01	2.98E-03	3.10E-02	7.97E-01	1										
2.15E-01	3.49E-01	1.05E-02	3.10E-02	8.04E-01	1										
1.19E-02	3.23E-02	1.55E-02	3.10E-02	9.43E-01	1										
2.53E-01	0.00E+00	3.71E-03	3.10E-02	9.24E-01	1										
4.93E-01	3.96E-01	1.88E-02	3.10E-02	7.35E-01	1										
3.47E-01	6.55E-01	3.27E-03	3.10E-02	6.83E-01	1										
4.43E-01	7.05E-01	5.00E-03	3.10E-02	6.48E-01	1										
4.43E-02	4.32E-02	2.22E-02	3.10E-02	9.28E-01	1										
2.08E-01	7.07E-02	2.11E-02	-2.88E-02	9.52E-01	1										
3.02E-01	1.01E-01	-2.59E-03	3.10E-02	8.86E-01	1										
4.74E-01	2.90E-01	4.49E-03	3.10E-02	7.86E-01	1										
3.54E-01	1.16E+00	-1.15E-02	2.32E-02	5.28E-01	1										
9.01E-02	2.38E-01	9.59E-03	3.10E-02	8.64E-01	1										
9.79E-02	2.03E-01	-8.28E-03	3.10E-02	8.90E-01	1										
3.98E-01	0.00E+00	-1.17E-02	1.79E-02	9.26E-01	1										
3.46E-01	6.97E-01	2.53E-03	3.10E-02	6.69E-01	1										
3.28E-01	1.06E+00	-1.20E-02	3.10E-02	5.59E-01	1										
6.71E-02	1.15E-01	2.52E-02	3.10E-02	8.97E-01	1										
1.17E-02	-3.63E-03	1.28E-02	3.10E-02	9.58E-01	1										
3.23E-01	5.75E-02	6.51E-03	3.10E-02	8.90E-01	1										
2.73E-01	1.39E-01	3.14E-03	3.10E-02	8.73E-01	1										
4.90E-03	-3.79E-03	-1.53E-02	3.10E-02	9.82E-01	1										
Number of Positive Differences (S+):				28											

Critical Value: 18

Survey Unit: Meets Acceptance Criterion

Performed By: *Dan Rumball*

Date: 11-20-06

Independent Review: *Robert A.*

Date: 11-20-06

DISCHARGE CANAL  
SURVEY UNIT 9106-0015  
RELEASE RECORD

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Attachment 2f  
COMPASS DQA Surface Soil Report with  
Retrospective Power Curve  
(5 Pages)



# DQA Surface Soil Report

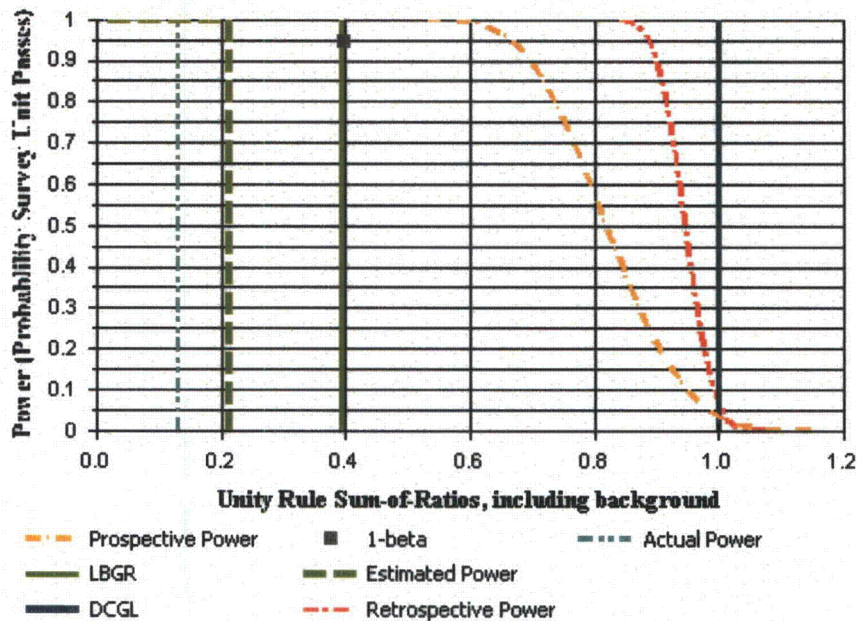
## Assessment Summary

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Site:	9106-0015 (19mrem/yr) w/HTDs		
Planner(s):	Dale Randall		
Survey Unit Name:	9106-0015		
Report Number:	1		
Survey Unit Samples:	28		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	<b>Reject Null Hypothesis (Survey Unit PASSES)</b>		

## Retrospective Power Curve

---





# DQA Surface Soil Report

## Survey Unit Data

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

Sample Number	Type	Am-241 (pCi/g)	C-14 (pCi/g)	Co-60 (pCi/g)
9106-0015-001F	S	0.1	0.1	0.01
9106-0015-002F	S	0.29	0.21	1.11
9106-0015-003F	S	0.1	0.1	0.14
9106-0015-004F	S	0	0.01	0.01
9106-0015-005F	S	0.1	0.1	0
9106-0015-006F	S	0.1	0.1	0.35
9106-0015-007F	S	0.1	0.1	0.36
9106-0015-008F	S	0.1	0.1	0.35
9106-0015-009F	S	0.1	0.1	0.03
9106-0015-010F	S	0.1	0.1	0
9106-0015-011F	S	0.1	0.1	0.4
9106-0015-012F	S	0.1	0.1	0.66
9106-0015-013F	S	0.1	0.1	0.7
9106-0015-014F	S	0.1	0.1	0.04
9106-0015-015F	S	0	-0.12	0.07
9106-0015-016F	S	0.1	0.1	0.1
9106-0015-017F	S	0.1	0.1	0.29
9106-0015-018F	S	0.19	0.06	1.16
9106-0015-019F	S	0.1	0.1	0.24
9106-0015-020F	S	0.1	0.1	0.2
9106-0015-021F	S	0	-0.05	0
9106-0015-022F	S	0.1	0.1	0.7
9106-0015-023F	S	0.1	0.1	1.06
9106-0015-024F	S	0.1	0.1	0.12
9106-0015-025F	S	0.1	0.1	0
9106-0015-026F	S	0.1	0.1	0.06
9106-0015-027F	S	0.1	0.1	0.14
9106-0015-028F	S	0.1	0.1	0

Sample Number	Type	Cs-137 (pCi/g)	Pu-241 (pCi/g)	SrY-90 (pCi/g)
9106-0015-001F	S	0.03	4.92	0.02
9106-0015-002F	S	0.52	24.6	-0.02
9106-0015-003F	S	0.05	4.92	0
9106-0015-004F	S	-0.01	0	0.02
9106-0015-005F	S	0.06	4.92	0.01
9106-0015-006F	S	0.32	4.92	0.01
9106-0015-007F	S	0.28	4.92	0
9106-0015-008F	S	0.22	4.92	0.01
9106-0015-009F	S	0.01	4.92	0.02
9106-0015-010F	S	0.25	4.92	0
9106-0015-011F	S	0.49	4.92	0.02
9106-0015-012F	S	0.35	4.92	0
9106-0015-013F	S	0.44	4.92	0
9106-0015-014F	S	0.04	4.92	0.02
9106-0015-015F	S	0.21	0	0.02
9106-0015-016F	S	0.3	4.92	0
9106-0015-017F	S	0.47	4.92	0
9106-0015-018F	S	0.35	0	-0.01
9106-0015-019F	S	0.09	4.92	0.01
9106-0015-020F	S	0.1	4.92	-0.01
9106-0015-021F	S	0.4	0	-0.01



# DQA Surface Soil Report

## Survey Unit Data

---

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

Sample Number	Type	Cs-137 (pCi/g)	Pu-241 (pCi/g)	SrY-90 (pCi/g)
9106-0015-022F	S	0.35	4.92	0
9106-0015-023F	S	0.33	4.92	-0.01
9106-0015-024F	S	0.07	4.92	0.03
9106-0015-025F	S	0.01	4.92	0.01
9106-0015-026F	S	0.32	4.92	0.01
9106-0015-027F	S	0.27	4.92	0
9106-0015-028F	S	0	4.92	-0.02

Sample Number	Type	Tc-99 (pCi/g)
9106-0015-001F	S	0.13
9106-0015-002F	S	0.39
9106-0015-003F	S	0.13
9106-0015-004F	S	0
9106-0015-005F	S	0.13
9106-0015-006F	S	0.13
9106-0015-007F	S	0.13
9106-0015-008F	S	0.13
9106-0015-009F	S	0.13
9106-0015-010F	S	0.13
9106-0015-011F	S	0.13
9106-0015-012F	S	0.13
9106-0015-013F	S	0.13
9106-0015-014F	S	0.13
9106-0015-015F	S	0
9106-0015-016F	S	0.13
9106-0015-017F	S	0.13
9106-0015-018F	S	0
9106-0015-019F	S	0.13
9106-0015-020F	S	0.13
9106-0015-021F	S	0.28
9106-0015-022F	S	0.13
9106-0015-023F	S	0.13
9106-0015-024F	S	0.13
9106-0015-025F	S	0.13
9106-0015-026F	S	0.13
9106-0015-027F	S	0.13
9106-0015-028F	S	0.13





# DQA Surface Soil Report

## Modified Data (Unity Rule SOR)

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

Sample Number	Type	Sum-of-Ratios (SOR)
9106-0015-001F	S	0.08
9106-0015-002F	S	0.59
9106-0015-003F	S	0.1
9106-0015-004F	S	0.02
9106-0015-005F	S	0.07
9106-0015-006F	S	0.23
9106-0015-007F	S	0.22
9106-0015-008F	S	0.21
9106-0015-009F	S	0.08
9106-0015-010F	S	0.09
9106-0015-011F	S	0.28
9106-0015-012F	S	0.34
9106-0015-013F	S	0.37
9106-0015-014F	S	0.09
9106-0015-015F	S	0.05
9106-0015-016F	S	0.13
9106-0015-017F	S	0.23
9106-0015-018F	S	0.47
9106-0015-019F	S	0.15
9106-0015-020F	S	0.13
9106-0015-021F	S	0.07
9106-0015-022F	S	0.35
9106-0015-023F	S	0.46
9106-0015-024F	S	0.12
9106-0015-025F	S	0.06
9106-0015-026F	S	0.13
9106-0015-027F	S	0.15
9106-0015-028F	S	0.04



# DQA Surface Soil Report

## Basic Statistical Quantities Summary

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<b>Statistic</b>	<b>Survey Unit</b>	<b>Background</b>	<b>DQO Results</b>
Sample Number	28	N/A	N=15
Mean (SOR)	0.19	N/A	0.21
Median (SOR)	0.13	N/A	N/A
Std Dev (SOR)	0.15	N/A	0.29
High Value (SOR)	0.59	N/A	N/A
Low Value (SOR)	0.02	N/A	N/A