



# Final Status Survey Final Report Phase IV

**Appendix A8** Survey Unit Release Record 9106-0008, Discharge Canal



November 2006

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### **CYAPCO** FINAL STATUS SURVEY RELEASE RECORD DISCHARGE CANAL SURVEY UNIT 9106-0008

Date: <u>11-14-01</u> Date: <u>11/14/06</u> Worf, Date: <u>11/14/06</u> mont Prepared By: FSS Engineer Reviewed By: FS8 Engineer Approved By:

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**Revision** 0

#### **RELEASE RECORD**

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#### 1. SURVEY UNIT DESCRIPTION

Survey Unit 9106-0008 (Discharge Canal) is designated as Final Status Survey (FSS) Class 2 and consists of approximately 9,763 m<sup>2</sup> (2.41 acres) of water covered sediment in an area located approximately 0.92 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 bounded as follows: Discharge Canal Survey Unit 9106-0007 is to the north (called north as orientated with the north to south flow of the Connecticut River), Survey Area 9523 is to the east, Discharge Canal Survey Unit 9106-0009 is to the south and South Peninsula Survey Area 9531 (formerly a part of 9530) is to the west. The survey unit comprises the canal sediments to the deeper of three feet or the original construction depth and it extends up the canal banks to the mean high water level.

The reference coordinates associated with this survey unit are E019 through E026 by S143 through S153 (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 9106-0008 as Class 2 in May 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 "walkdown."
- 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. 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

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concentrations of Cs-137, Co-60 and other radionuclides were a small 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 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  $\rho$ Ci/g for Co-60, 0.024 $\rho$ Ci/g for Cs-134 and 0.722  $\rho$ Ci/g for Cs-137.

An initial characterization survey was implemented during April and May of 2004. However, none of the sampling fell inside the footprint of 9106-0008. In an adjacent Survey Unit (9106-0009) six (6) samples from three (3) locations were obtained by biased sampling throughout the area. The samples were analyzed off-site by gamma spectroscopy and with radiochemical analyses for Sr-90 and Tritium. Hard-to-Detect analyses were also conducted on one (1) of the six (6) samples. The only plant-related dosimetrically significant radionuclides identified in the samples were Cs-137, Cobalt-60 and Ni-63. No samples indicated radioactive material in quantities above the ten (10) mrem/yr design DCGL. Cobalt-60 accounted for the majority of the dose in these samples with a maximum concentration of 0.57 pCi/g.

A final characterization was performed by Site Closure personnel in April of 2006. Six (6) sediment samples from six (6) locations were taken. All of the samples were analyzed by gamma spectroscopy. Based on the initial and final characterization results, the radionuclides of concern identified in the sample data for FSS planning purposes were Cesium-137, Cobalt-60 and Ni-63. Since HTD analyses were not performed for all radionuclides of interest during characterization, additional HTD analyses were performed as a part of the FSS. The statistics for each of the radionuclides of concern in an adjacent Survey Unit (9106-0007), it was decided that testing for this isotope was an appropriate conservatism.

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Table 1 – Basic Statistical Quantities for Cs-137, Co-60 and Ni-63 from the										
Characterization Survey										
Parameter         Cs-137 (ρCi/g)         Co-60 (ρCi/g)         Ni-63 (ρCi/g)										
Minimum Value:	-4.53E-03	-3.24E-04	-1.68E+00							
Maximum Value:	2.51E-01	5.87E-01	3.47E+01							
Mean:	1.39E-01	3.28E-01	1.65E+01							
Median:	1.42E-01	3.10E-01	1.65E+01							
Standard Deviation:	9.84E-02	2.09E-01	2.57E+01							
NOTE: The Operational DO	NOTE: The Operational DCGLs are 6.01 pCi/g for Cs-137, 2.90 pCi/g for Co-60 and 549									
for Ni-63; 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 a low probability for residual radioactivity to be present in this survey unit in concentrations greater than the Operational DCGLs justifying a final survey unit classification of Class 2 (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 9106-0008 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).

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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.

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 either existing groundwater or by future groundwater (reference CY memo ISC 06-024). Therefore, dose contribution from both existing and future groundwater is zero (0) mrem/yr TEDE, based on field data.

Equation 2:

19 mrem/yr<sub>Total</sub>=19 mrem/yr<sub>Soil</sub>+0 mrem/yr<sub>Existing GW</sub>+0 mrem/yr<sub>Future GW</sub>

The allowable dose for sediment 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

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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.

Table 2 – Radionuclide Specific Base Case Soil DCGL, Operational DCGLs         and Required Minimum Detectable Concentrations							
Radionuclide <sup>(1)</sup>	Base Case Soil DCGL (ρCi/g) <sup>(2)</sup>	Operational DCGL (ρCi/g) <sup>(3)</sup>	Required MDC (ρCi/g) <sup>(4)</sup>				
Н-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				
Fe-55	2.74E+04	2.08E+04	1.10E+03				
Co-60	3.81E+00	2.90E+00	1.52E-01				
Ni-63	7.23E+02	5.49E+02	2.89E+01				
Sr-90	1.55E+00	1.18E+00	6.20E-02				
Nb-94	7.12E+00	5.41E+00	2.85E-01				
Tc-99	1.26E+01	1.26E+01 9.58E+00					
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				
Pu-238	2.96E+01	2.25E+01	1.18E+00				
Pu-239/240	2.67E+01	2.03E+01	1.07E+00				
Pu-241	8.70E+02	6.61E+02	3.48E+01				
Am-241 <sup>(5)</sup>	2.58E+01	1.96E+01	1.03E+00				
Cm-243/244	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. Characterization was completed in April of 2006 as discussed in Section 2. Cesium-137, Cobalt-60

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and Nickel-63 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 Ni-63 are provided in Table 1.

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

#### 4. SURVEY DESIGN

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. To assist the FSS Engineers when preparing survey plans for FSS, guidance is provided in Procedure RPM 5.1-11, *"Preparation of Final Status Survey Plans"*. By design, the FSSP meets the ALARA criteria for soils as specified in Chapter 4 of the LTP. The FSSP uses an integrated sample design that combines scanning surveys and sampling which can be either random or biased.

Characterization was performed by Site Closure personnel in April and May 2006 to determine existing conditions and obtain radiological data for Final Status Survey (FSS). The DQO process determined that Cs-137, Co-60, Sr-90 and Ni-63 would be the radionuclides of concern (refer to Section 3). The sum of fractions or unity rule would be used with the individual Operational DCGLs because multiple radionuclides (Cs-137, Co-60, Sr-90 and Ni-63) were considered in the survey design. Other radionuclides identified during FSS would be evaluated to ensure adequate survey design and compliance with the unity rule.

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 Elevated Measurement Comparison (EMC) did not apply to this survey unit since the survey unit is a Class 2 and discrete, elevated areas of contamination were not expected.

The Sign Test was selected as the non-parametric statistical test. The use of the Sign Test did not require the selection or use of a background reference area,

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which simplified survey design and implementation. This approach was conservative since it included background Cs-137 as part of the sample set.

The number of 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 0.5 to maintain the relative shift  $(\Delta/\sigma)$  in the range of 1 and 3. The resulting relative shift was 3.0. 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 the 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 fourteen (14) sediment core samples for nonparametric 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."* Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy. A systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 2 area.

Sample 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.

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able 3 – Sample Measurement Locations with Associated GPS Coordinates						
Designation	Northing	Easting				
9106-0008-001F	234825.31	672724.61				
9106-0008-002F	234825.31	672817.80				
9106-0008-003F	234744.60	672771.20				
9106-0008-004F	234744.60	672864.40				
9106-0008-005F	234663.89	672817.80				
9106-0008-006F	234663.89	672911.00				
9106-0008-007F	234583.17	672864.40				
9106-0008-008F	234583.17	672957.60				
9106-0008-009F	234502.46	672911.00				
9106-0008-010F	234502.46	673004.20				
9106-0008-011F	234421.75	672957.60				
9106-0008-012F	234421.75	673050.79				
9106-0008-013F	234341.04	673004.20				
9106-0008-014F	234341.04	673097.39				

Four (4) 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. Two (2) of the four (4) samples were randomly selected using the Microsoft Excel "RAND" function. The two (2) samples exhibiting the highest observed radionuclide concentrations by gamma analyses were also selected.

The implementation of survey specific quality control measures as referenced by Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey," included the collection of two (2) sediment 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.

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

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,	Table 4 – Synopsis of the Survey Design <sup>(1)</sup>									
Feature	Design Criteria	Basis								
Survey Unit Land Area	9,763 m <sup>2</sup>	Based on AutoCAD-LT and Visual Sample Plan calculations								
Number of Measurements	14	Type 1 and Type 2 errors were 0.05, sigma was 0.166 the LBGR was set to 0.5 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 3.0								
Grid Spacing	28.4 m	Based on triangular grid								
Design DCGL	3.16 ρCi/g Cs-137 1.52 ρCi/g Co-60 0.62 ρCi/g Sr-90 289 ρCi/g Ni-63	To achieve ten (10) mrem/yr TEDE								
Operational DCGL	6.01 ρCi/g Cs-137 2.90 ρCi/g Co-60 1.18 ρCi/g Sr-90 549 ρCi/g Ni-63	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 ρCi/g Cs-137 2.90 ρCi/g Co-60 1.18 ρCi/g Sr-90 549 ρCi/g Ni-63	The Operational DCGL meets the LTP criteria for a Class 2 survey unit								

(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

#### 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 Survey, 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

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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 Fourteen (14) 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*". Samples were controlled, transported, stored, and transferred to the off-site laboratory using COC protocols.

Four (4) samples (9106-0008-006F, 9106-0008-007F, 9106-0008-008F and 9106-0008-012F) were selected for HTD radionuclide analysis by the off-site laboratory.

The implementation of survey specific quality control measures included the collection of two (2) split samples at locations 9106-0008-006F and 9106-0008-010F for "split sample" 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 fourteen (14) samples taken for non-parametric statistical testing and the associated duplicates using gamma spectroscopy. Sr-90 was analyzed by gas flow proportional counting. All analyses were performed to the required MDC.

Cesium-137 was identified in nine (9), Co-60 was identified in seven (7), Sr-90 was identified in two (2) and Ni-63 in none of the fourteen (14) samples. The results reported for the remaining sample analyses indicated that activity was present at levels approaching or below the established detection limits in the remaining samples collected and analyzed for non-parametric testing.

Several other radionuclides which were positively identified (i.e., a result greater than two (2) standard deviations uncertainty) could be de-selected or excluded using the 5% and 10% rule described in Section 5.4.7.2 of the LTP.

The off-site laboratory also processed four (4) samples for full HTD analysis as required by the sample plan. The requested analyses included alpha spectroscopy and liquid scintillation depending upon the radionuclide and the

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measurement method. All analyses were performed to the required MDC. Five (5) of the HTD radionuclides met the acceptance criteria for detection (i.e., a result greater than two standard deviations uncertainty) in more than one (1) sample; however, each of the positive results for HTD radionuclides could be de-selected based on the 5% and 10% rules.

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

Table 5- Summary of Sediment Sample Results									
Sample Number	Cs-137 ρCi/g	Co-60 ρCi/g	Sr-90 ρCi/g	Ni-63 ρCi/g	Fraction of the Operational DCGL <sup>(1)</sup>				
9106-0008-001F	3.96E-01	1.33E-01	5.79E-03	2.33E-01	1.17E-01				
9106-0008-002F	-8.91E-03	7.77E-03	2.03E-02	-4.84E+00	1.84E-02				
9106-0008-003F	2.05E-01	3.24E-01	1.12E-02	-2.74E+00	1.55E-01				
9106-0008-004F	4.32E-02	0.00E+00	-6.19E-03	-1.80E+00	1.94E-03				
9106-0008-005F	2.66E-01	2.75E-02	8.28E-04	-8.58E-01	5.44E-02				
9106-0008-006F	4.92E-01	7.79E-01	5.59E-03	2.28E+00	3.55E-01				
9106-0008-007F	2.29E-02	2.68E-02	-8.81E-04	-2.33E+00	1.23E-02				
9106-0008-008F	4.72E-01	9.17E-01	-2.69E-03	-4.12E-01	3.92E-01				
9106-0008-009F	1.55E-02	-1.08E-02	-5.90E-03	-2.05E+00	-6.15E-03				
9106-0008-010F	3.36E-01	2.46E-01	3.47E-03	1.23E-01	1.44E-01				
9106-0008-011F	6.76E-02	1.22E-01	1.93E-02	-3.34E+00	6.97E-02				
9106-0008-012F	1.84E-01	1.79E-01	-1.92E-02	8.39E-01	7.61E-02				
9106-0008-013F	1.03E-02	2.99E-02	9.80E-03	-2.70E+00	2.03E-02				
9106-0008-014F	-3.89E-03	-1.45E-02	5.40E-03	-1.72E+00	-1.07E-03				

 The Operational DCGLs from Table 2 are 6.01 pCi/g for Cs-137, 2.90 pCi/g for Co-60, 1.18 for Sr-90 and 549 for Ni-63; these are used in conjunction with the unity rule to achieve nineteen (19) mrem/yr TEDE.

Biased sampling was not called for in the sample plan.

#### 7. QUALITY CONTROL

The two (2) 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."* 

Split-sample number 9106-0008-006F/S did not meet the comparison criterion for Co-60. A possible cause for this anomaly could be the presence of Co-60 in the form of discrete particles. Such a physical form 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. 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. Additionally, Cs-137 did meet the comparison criteria for the sample results.

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However, Ni-63 and Sr-90 had resolutions of zero (0) and one (1) respectively and values <4 have not been addressed in NRC Inspection Procedure 84750. Therefore, a determination of the acceptability for resolution values of <4 can not be made.

For the second QC split sample number 9106-0008-010F/S there was an acceptable level of agreement between the samples for C0-60 and Cs-137. 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. However, Ni-63 and Sr-90 had resolutions of zero (0) and one (1) respectively and resolution values of <4 have not been addressed in NRC Inspection Procedure 84750. Therefore, a determination of the acceptability for values <4 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

No Investigations were required to be performed since none of the sample results exceeded the investigation levels.

#### 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 sediment 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 sediment used to demonstrate compliance with the LTP 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.

#### **RELEASE RECORD**

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 2.

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 fourteen (14) to meet the Operational DCGL. However, the value of the 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 3.1 standard deviations, was not unusually large. The difference between the mean and median was 30% 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 1.58.

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

#### 12. ANOMALIES

The anomaly associated with the disagreement between the field splits has been discussed in Section 7. The source of the disagreement for Co-60 was likely due to Co-60 being present in the form of discrete particles. Such a physical form does not lend itself to homogenous mixing in a sediment matrix.

#### 13. CONCLUSION

Survey Unit 9106-0008 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 2 survey unit.

#### RELEASE RECORD

The dose contribution from sediment is 1.9 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 also 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 that from sediment, will not exceed 1.9 mrem/yr Total Effective Dose Equivalent (TEDE).

#### 14. ATTACHMENTS

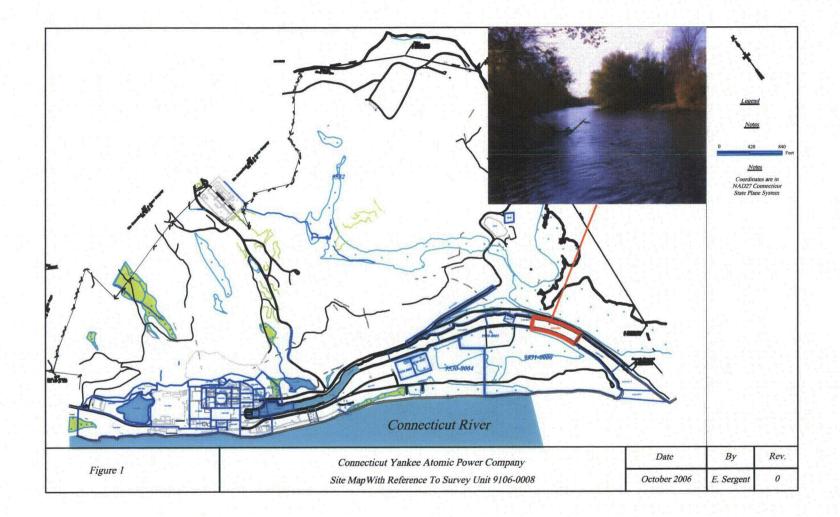
14.1 Attachment 1 – Figures

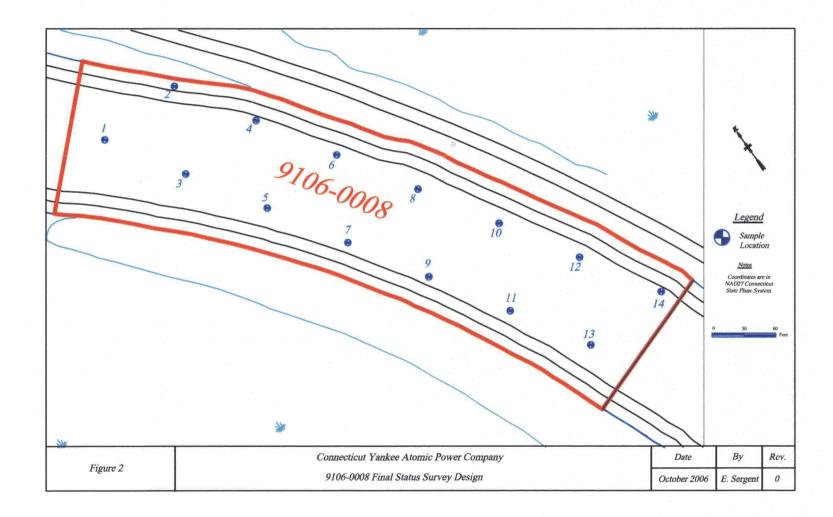
14.2 Attachment 2 – Sample and Statistical Data

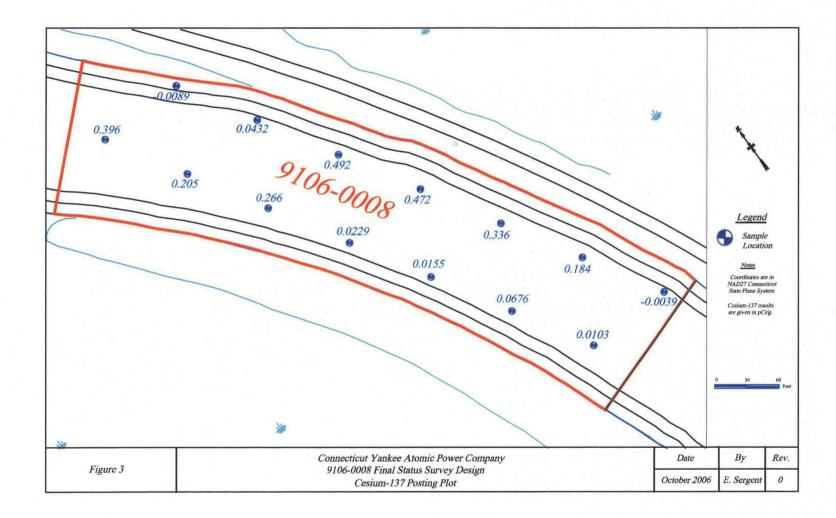
**Revision 0** 

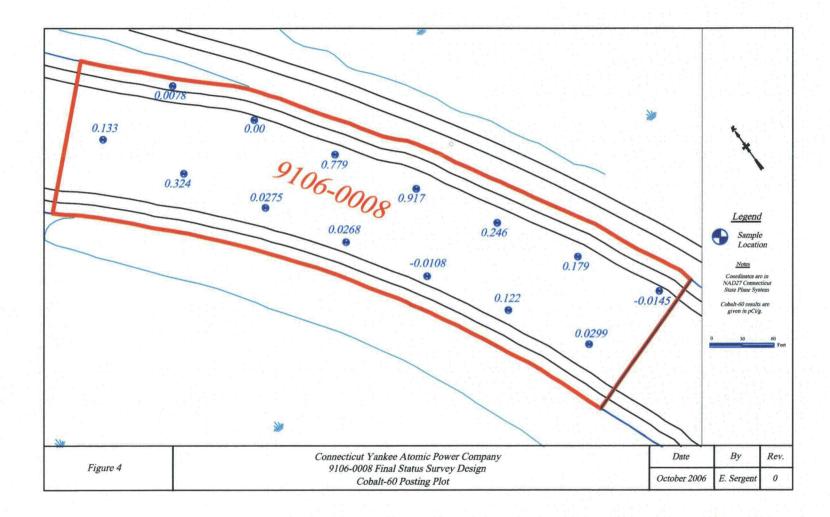
RELEASE RECORD

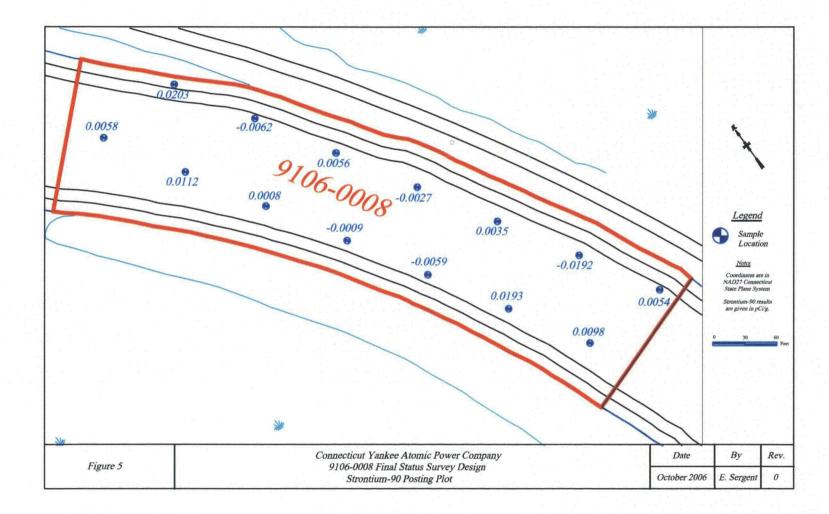
Attachment 1 Figures (6 pages)

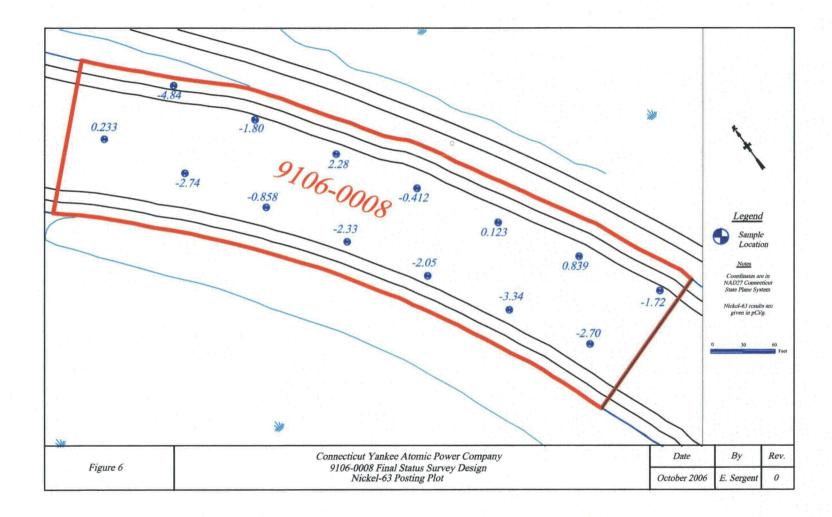












RELEASE RECORD

Attachment 2 Sample and Statistical Data

RELEASE RECORD

Attachment 2a Sample Data (178 Pages)

#### CASE NARRATIVE For CONNECTICUT YANKEE RE: Sediment PO# 002332 Work Order: 163741 SDG: MSR #06-0743

June 19, 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 May 26, 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):

<u>Sample ID</u>	<u>Client Sample ID</u>
163741001	9106-0008-001F
163741002	9106-0008-003F
163741003	9106-0008-004F
163741004	9106-0008-005F
163741005	9106-0008-006F
163741006	9106-0008-006FS
163741007	9106-0008-002F
163741008	9106-0008-007F

Page 2 of 75

<u>Sample ID</u>	<u>Client Sample ID</u>
163741009	9106-0008-008F
163741010	9106-0008-009F
163741011	9106-0008-010F
163741012	9106-0008-010FS
163741013	9106-0008-011F
163741014	9106-0008-013F
163741015	9106-0008-014F
163741016	9106-0008-012F

#### **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:**

Fourteen sediment samples were analyzed for FSSGAM, Sr-90 and Ni-63. Two sediment 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

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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

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# Chain of Custody and Supporting Documentation

Health Physics Procedure

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GPP-GGGR-R5104-003-Attachment B-CY-001 Major

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0	Hollow Road, 1 860-26	East Hampton 7-2556	, CT 0 <b>642</b>		y		16.			fC		ly Form	No. 2006-00367
Project Name: Haddam N	Ī				Anal	yses Re	equested	1	La	ib Use Only			
Contact Name & Phone: Jack McCarthy 860-267										Co	omments:		
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.				Sample	Container Size-	FSSGAM	FSSALL	Sr-90	Ni-63				
Sample Designation	Date	Time	Media Code	Type Code	&Type Code							Comment, Preservation	Lab Sample ID
9106-0008-001F	5/05/06	11:13	SE	C	BP	X		X	X		Tra	insferred from COC # 2006-00324	
9106-0008-003F	5/5/06	13:35	SE	C	BP	X		X	X		Tra	insferred from COC # 2006-00325	
9106-0008-004F	5/5/06	13:51	SE	Ċ	BP	X		X	x		Tra	insferred from COC # 2006-00325	····
9106-0008-005F	5/5/06	14:17	SE	Ċ	BP	X		X	x		Tra	ansferred from COC # 2006-00325	
9106-0008-006F	5/5/06	14:36	SE	C	BP	X		X	X		Tra	ansferred from COC # 2006-00325	
9106-0008-006FS	5/5/06	14:36	SE	С	BP	X		x	X		Tre	ansferred from COC # 2006-00325	
9106-0008-007F	5/5/06	15:03	SE	С	BP		X				Tra	insferred from COC # 2006-00325	
9106-0008-002F	5/5/06	13:10	SE	C	BP	X		X	X		Tra	ansferred from COC # 2006-00325	
NOTES: PO #: 002332 MSR #: 06-0743 SSWP# NA X LTP QA Radwaste QA Non QA Samples Shipped Via: Internal Container V Fed Ex UPS Hand Custody Sealed? Y N N													
1) Relinquished By	Date/Tim						Other	Custody Seal Intact?					
3) Relinquished By		Date/Tim		4) Recei	ved by		y	<u></u>	Date/	Time		Bill of Lading # 79.27.5154 1162	Υ□Ν□

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Health Physics Procedure

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GPP-GGGR-R5104-003-Attachment B-CY-001 Major

	Connecticut	Yankee At Hollow Road, I				y			Ch	ain o	f C	ustod	y Form	No. 2006-00366	
	0	860-26	7-2556	, C 1 0042									16374	7.	
	Project Name: Haddam N	Neck Decom	nissioning					Anal	yses Re	queste	1		b Use Only		
	Contact Name & Phone: Jack McCarthy 860-267	7-2556 Ext.	3024									Co	mments:		
	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.			Sample	Container Size-	FSSGAM	FSSALL	FSSALL Sr-90							
	Sample Designation	Date	Time	Media Code	Type Code	&Type Code							Comment, Preservation	Lab Sample ID	
29	9106-0008-008F	5/08/06	08:01	SE	C	BP	X		X	X		Tran	sferred from COC # 2006-00327		
- 10	9106-0008-009F	5/08/06	08:32	SE	Č	BP	X	<u> </u>	X	X		Tran	sferred from COC # 2006-00327		
nil	9106-0008-010F	5/08/06	09:09	SE	Č	BP	x	[	X	x		Tran	sferred from COC # 2006-00327		
12	9106-0008-010FS	5/08/06	09:09	SE	Ċ	BP	x	<u> </u>	X	x		Trar	isferred from COC # 2006-00327		
115	9106-0008-011F	5/08/06	09:30	SE	Ċ	BP	X		X	X		Tran	sferred from COC # 2006-00327		
16	9106-0008-012F	5/08/06	09:53	SE	Ċ	BP		X	_			Tran	sferred from COC # 2006-00327		
1	9106-0008-013F	5/08/06	10:16	SE	Ċ	BP	X		x	X		Tran	sferred from COC # 2006-00327		
ארו ביי	9106-0008-014F	5/08/06	10:47	SE	Ċ	BP	X		X	x		Tran	sferred from COC # 2006-00327		
20		1			<u> </u>			<u> </u>							
	NOTES: PO #: 002332	MSR #: 06- <i>(</i>	0743 ssv	VP# NA		LTP QA		Radwa	iste QA		Non	QA	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: <u>21</u> Deg. C Custody Sealed? Y    N 27	
	1) Relinquished By		Date/Tim	e	2) Received By				Date/Time				Other	Custody Seal Intact?	
	3) Relinquished By		Date/Tim	e	4) Received By			Date/Time				Bill of Lading #	Y₽ N□		

Connecticut Yankee Statement of Work for Analytical Lab Services	163741%. CY-ISC-SOW-001
Figure 1. Sample	Check-in List
Date/Time Received: 52606 0930	
SDG#:M5R#06-071	-13
Work Order Number: 1637411	· · · · · · · · · · · · · · · · · · ·
Shipping Container ID: 19275154 1162 Ch	nain of Custody #_2006-00367
1. Custody Seals on shipping container intact?	Yes [9] No [ ]
2. Custody Seals dated and signed?	Yes [ ] No [ 7
3. Chain-of-Custody record present?	Yes [-] No [ ]
4. Cooler temperature 9	<u>گ</u>
5. Vermiculite/packing materials is:	Wet [] Dry [] NA
6. Number of samples in shipping container:	
7. Sample holding times exceeded?	Yes [ ] No [-]
8. Samples have:	
hazard lab	els
	e sample labels
9. Samples are:	
in good conditionleaking	
	r bubbles
0. Were any anomalies identified in sample receipt?	Yes [] No [
1. Description of anomalies (include sample number	
· · · · · · · · · · · · · · · · · · ·	
ample Custodian/Laboratory: Kufu	Date: 52404969
elephoned to: On	

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14.5

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# SAMPLE RECEIPT & REVIEW FORM

PATORIES'				PM use only					
Client: Com. Jankee				SDG/ARCOC/Work Order: 1637411,					
Date Received: 62606				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Received By: ((L))				a a a a a a a a a a a a a a a a a a a					
		-	1						
Samp <del>le</del> Receipt Criteria	Yes	NA	°2	Comments/Qualifiers (Required for Non-Conforming Items)					
1 Shipping containers received inta and sealed?	ct /	1		Circle Applicable: seals broken damaged container leaking container other (describe)					
Samples requiring cold 2 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?	7			Circle Applicable: seals broken damaged container leaking container other (describe)					
5 Samples requiring chemical preservation at proper pH?		1		Sample ID's, containers affected and observed pH:					
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:					
<ul> <li>Are Encore containers present?</li> <li>7 (If yes, immediately deliver to VOA laboratory)</li> </ul>			/						
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:					
Date & time on COC match date & time on bottles?	$\square$			Sample ID's affected:					
<sup>1</sup> Number of containers received match number indicated on COC?	:/		·	Sample ID's affected:					
2 COC form is properly signed in relinquished/received sections?	7								
Air Bill , Tracking #'s, & Additional Comments		$\gamma$	75	1 5154 1162					
Suspected Hazard Information	Non- Regulated	Regulated	gh 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 nvestigation.					
Radiological Classification?	X	~	N	Maximum Counts Observed*: COM 20 Per R50					
PCB Regulated? Shipped as DOT Hazardous	1			Comments:					
Material? If yes, contact Waste Manager or ESH Manager.	1.			lazard Class Shipped: JN#:					
PM (or PMA) review of Hazard clas Page 8 of 75	sificati	on:	Û	L Initials 5/26/06 Date:					

· ·	1637417	
۰.	Connecticut Yankee	
	Statement of Work for Analytical Lab Services CY-ISC-SOW-00	1
	Figure 1. Sample Check-in List	•
	Date/Time Received:	. <u>.</u>
	SDG#:NSQ#06-07-13	_
· .	Work Order Number: 1637411.	·. -
	Shipping Container ID: 79275 K4 1173 Chain of Custody # 20010-003 Lece	- -
··.	1. Custody Seals on shipping container intact?     Yes I No []	
. • •	2. Custody Seals dated and signed? Yes INo []	•
· ·	3. Chain-of-Custody record present? Yes [] No []	
	<ul> <li>4. Cooler temperature <u>2/**</u></li> <li>5. Vermiculite/packing materials is: Wet [] Dry []</li> </ul>	-
	6. Number of samples in shipping container:(9) Ciaht	· · ·
	7. Sample holding times exceeded? Yes [] No [1]	-
	8. Samples have:	
	hazard labels	
	custody seals appropriate sample labels	
		N
	9. Samples are:	
·	9. Samples are:	
• • • • • • • • •		
• • • • •	in good conditionleaking brokenhave air bubbles	
• • • • • •	in good conditionleaking brokenhave air bubbles	
	<ul> <li>in good conditionleaking</li> <li>brokenhave air bubbles</li> <li>10. Were any anomalies identified in sample receipt? Yes [] No []</li> </ul>	
	<ul> <li>in good conditionleaking</li> <li>brokenhave air bubbles</li> <li>10. Were any anomalies identified in sample receipt? Yes [] No []</li> </ul>	

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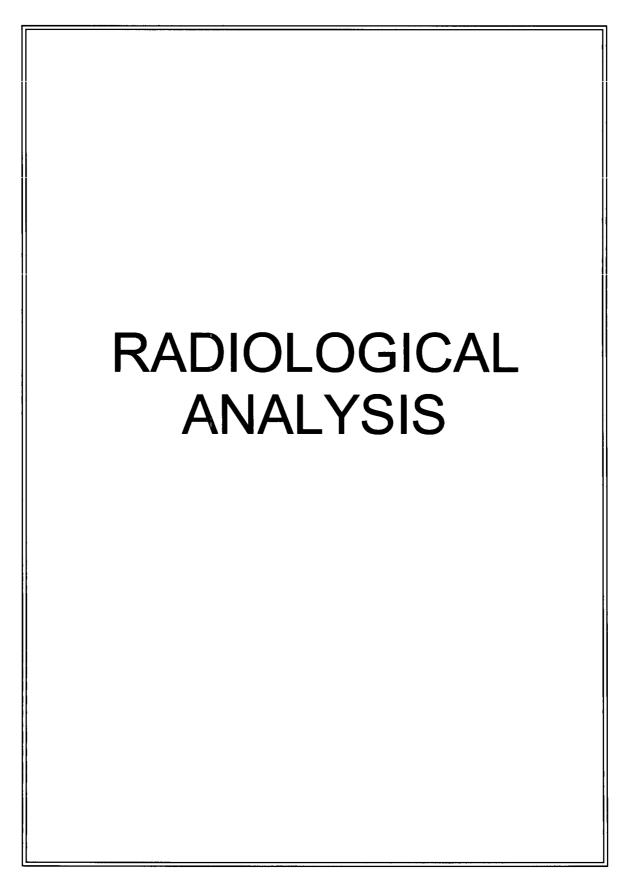


## SAMPLE RECEIPT & REVIEW FORM

"ATORIES"				PM use only			
Client: Yankee				SDG/ARCOC/Work Order: 163741'1.			
Date Received: 5/24/04				PM(A) Review (ensure non-conforming items are resolved prior to signing):			
Received By: C. Duri coto				en			
Sample Receipt Criteria		NA	ź	Comments/Qualifiers (Required for Non-Conforming Items)			
1 Shipping containers received inta and sealed?		个	$\top$	Circle Applicable: seals broken damaged container leaking container other (describe)			
Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		1	ł	Circle Coolant # ice bags blue ice dry ice fone 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)			
Samples requiring chemical preservation at proper pH?		~	1	Sample ID's, containers affected and observed pH:			
6 VOA vials free of headspace (defined as < 6mm bubble)?		V	1	Sample ID's and containers affected:			
<ul><li>Are Encore containers present?</li><li>7 (If yes, immediately deliver to VOA laboratory)</li></ul>			V				
8 Samples received within holding time?	V			Id's and tests affected:			
9 Sample ID's on COC match ID's on bottles?	1			Sample ID's and comainers affected:			
10 Date & time on COC match date & time on bottles?	1			Sample ID's affected:			
11 Number of containers received match number indicated on COC?	V			Sample ID's affected:			
12 COC form is properly signed in relinquished/received sections?	C.		$\checkmark$	not relinguisted			
Air Bill , Tracking #'s, & Additional Comments		27	5	Coc. # 2004 -007 44			
Suspected Hazard Information		Regulated	High Lev	RSO RAD Receipt #			
A Radiological Classification? B PCB Regulated?	CX			Maximum Counts Observed*: 40 CPM			
Shipped as DOT Hazardous				Comments:			
Material? If yes, contact Waste Manager or ESH Manager.	1			Hazard Class Shipped: JN#:			
PM (or PMA) review of Hazard classification: Initials Solution: Date:							
Page 10 of 75							

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#### Radiochemistry Case Narrative Connecticut Yankee Atomic Power Co. (YANK) Work Order 163741

#### **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:	537411
Prep Batch Number:	534049
Dry Soil Prep GL-RAD-A-021 Batch Number:	534048

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201110207	Method Blank (MB)
1201110208	163741008(9106-0008-007F) Sample Duplicate (DUP)
1201110209	163741008(9106-0008-007F) Matrix Spike (MS)
1201110210	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: 163741008 (9106-0008-007F).

#### **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.

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:	537412
Prep Batch Number:	534049
Dry Soil Prep GL-RAD-A-021 Batch Number:	534048

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201110215	Method Blank (MB)
1201110216	163741008(9106-0008-007F) Sample Duplicate (DUP)
1201110217	163741008(9106-0008-007F) Matrix Spike (MS)
1201110218	Laboratory Control Sample (LCS)

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: 163741008 (9106-0008-007F).

#### **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.

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:	537417
Prep Batch Number:	534049
Dry Soil Prep GL-RAD-A-021 Batch Number:	534048

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201110229	Method Blank (MB)
1201110230	163741008(9106-0008-007F) Sample Duplicate (DUP)
1201110231	163741008(9106-0008-007F) Matrix Spike (MS)
1201110232	Laboratory Control Sample (LCS)

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: 163741008 (9106-0008-007F).

#### **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.

Product:	Gamma,Solid-FSS GAM & ALL FSS
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	534130
Prep Batch Number:	534048

Sample ID	Client ID
163741001	9106-0008-001F
163741002	9106-0008-003F
163741003	9106-0008-004F
163741004	9106-0008-005F
163741005	9106-0008-006F
163741006	9106-0008-006FS
163741007	9106-0008-002F
163741008	9106-0008-007F
163741009	9106-0008-008F
163741010	9106-0008-009F
163741011	9106-0008-010F
163741012	9106-0008-010FS
163741013	9106-0008-011F
163741014	9106-0008-013F
163741015	9106-0008-014F
163741016	9106-0008-012F
1201102649	Method Blank (MB)
1201102650	163741001(9106-0008-001F) Sample Duplicate (DUP)
1201102651	Laboratory Control Sample (LCS)

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: 163741001 (9106-0008-001F).

#### **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 relative percent difference for Pb-214, in samples 1201102650 (9106-0008-001F) and 163741001 (9106-0008-001F), does not meet the standard requirements. However, when a relative error ratio is calculated, precision is shown at 2.38.

### **Qualifier information**

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high Full-Width Half-Maximum.	Potassium-40	1201102649
UI	Data rejected due to interference.	Europium-155	163741016
		Manganese-54	163741004
UI	Data rejected due to low abundance.	Cesium-134	163741005
			163741007
			163741013
			163741014
			163741016
			1201102650
		Cobalt-60	163741003

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:	536483
Prep Batch Number:	534049
Dry Soil Prep GL-RAD-A-021 Batch Number:	534048

Sample ID	Client ID
163741001	9106-0008-001F
163741002	9106-0008-003F
163741003	9106-0008-004F
163741004	9106-0008-005F
163741005	9106-0008-006F
163741006	9106-0008-006FS
163741007	9106-0008-002F
163741008	9106-0008-007F
163741009	9106-0008-008F
163741010	9106-0008-009F
163741011	9106-0008-010F
163741012	9106-0008-010FS
163741013	9106-0008-011F
163741014	9106-0008-013F
163741015	9106-0008-014F
163741016	9106-0008-012F
1201108056	Method Blank (MB)
1201108057	163741001(9106-0008-001F) Sample Duplicate (DUP)
1201108058	163741001(9106-0008-001F) Matrix Spike (MS)
1201108059	Laboratory Control Sample (LCS)

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.

#### **<u>Calibration Information:</u>**

#### **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: 163741001 (9106-0008-001F).

#### **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 163741001 (9106-0008-001F), 163741005 (9106-0008-006F) and 163741011 (9106-0008-010F) 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**

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:	536314

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201107610	Method Blank (MB)
1201107611	163741008(9106-0008-007F) Sample Duplicate (DUP)
1201107612	163741008(9106-0008-007F) Matrix Spike (MS)
1201107613	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: 163741008 (9106-0008-007F).

#### **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.

Product:	Liquid Scint Fe55, Solid-ALL FSS
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:	538969
Prep Batch Number:	534049
Dry Soil Prep GL-RAD-A-021 Batch Number:	534048

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201113887	Method Blank (MB)
1201113888	163741008(9106-0008-007F) Sample Duplicate (DUP)
1201113889	163741008(9106-0008-007F) Matrix Spike (MS)
1201113890	Laboratory Control Sample (LCS)

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: 163741008 (9106-0008-007F).

#### **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.

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:	538365
Prep Batch Number:	534049
Dry Soil Prep GL-RAD-A-021 Batch Number:	534048

Sample ID	Client ID
163741001	9106-0008-001F
163741002	9106-0008-003F
163741003	9106-0008-004F
163741004	9106-0008-005F
163741005	9106-0008-006F
163741006	9106-0008-006FS
163741007	9106-0008-002F
163741008	9106-0008-007F
163741009	9106-0008-008F
163741010	9106-0008-009F
163741011	9106-0008-010F
163741012	9106-0008-010FS
163741013	9106-0008-011F
163741014	9106-0008-013F
163741015	9106-0008-014F
163741016	9106-0008-012F
1201112555	Method Blank (MB)
1201112556	163741003(9106-0008-004F) Sample Duplicate (DUP)
1201112557	163741003(9106-0008-004F) Matrix Spike (MS)
1201112558	Laboratory Control Sample (LCS)

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.

#### **<u>Calibration Information:</u>**

#### **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: 163741003 (9106-0008-004F).

#### **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**

Product:	LSC, Tritium Dist, Solid-HTD2,ALL FS				
Analytical Method:	EPA 906.0 Modified				
Analytical Batch Number:	535984				

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201106885	Method Blank (MB)
1201106886	163626016(9106-0007-001F) Sample Duplicate (DUP)
1201106887	163626016(9106-0007-001F) Matrix Spike (MS)
1201106888	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: 163626016 (9106-0007-001F).

#### **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.

Product:	Liquid Scint C14, Solid All,FSS
Analytical Method:	EPA EERF C-01 Modified
Analytical Batch Number:	534837

Sample ID	Client ID
163741008	9106-0008-007F
163741016	9106-0008-012F
1201104384	Method Blank (MB)
1201104385	162335019(9106-0003-014F) Sample Duplicate (DUP)
1201104386	162335019(9106-0003-014F) Matrix Spike (MS)
1201104387	Laboratory Control Sample (LCS)

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: 162335019 (9106-0003-014F).

#### **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

Samples 1201104385 (9106-0003-014F) and 163741016 (9106-0008-012F) were recounted due to high MDAs. Samples were reprepped 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.

#### **Certification Statement**

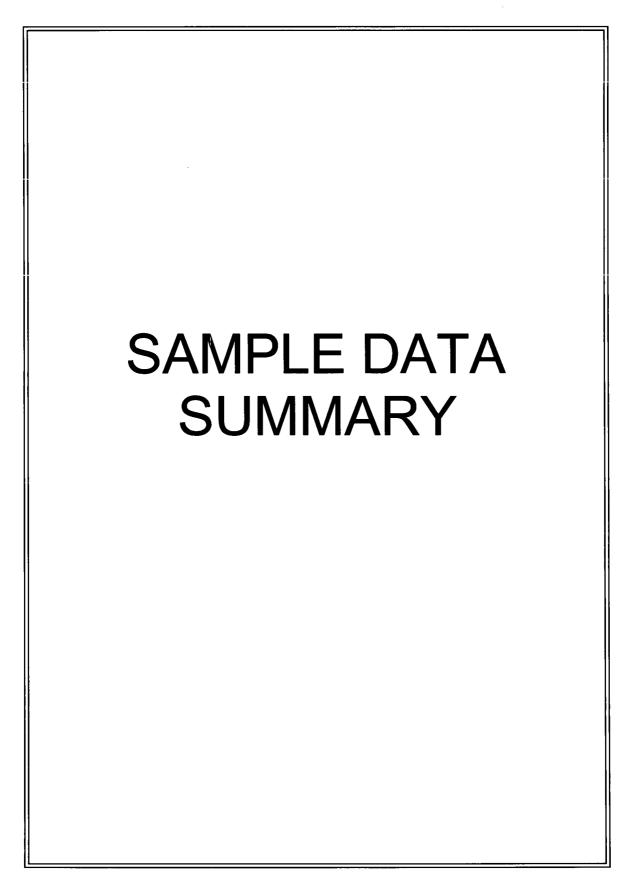
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

#### **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:** 



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#06-0743 GEL Work Order: 163741

#### 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 reporting 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.

hella

Reviewed by

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

### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power									
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	cCarthy	ticut 06424		·		F	Report Date: Jun	e 23, 20	006		
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	D: ate: Date:		9106 00 1637410 SE 05 MAY 26 MAY Client 38.9%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	Date	Time I	Batch N	/Itd
Rad Gamma Spec Analys	sis											
Gamma, Solid FSS GAM	1 & ALL FSS	5										
Actinium 228		0.817	+/ 0.177	0.0585	+/ 0.177	0.128	pCi/g	MJH1	06/15/0	06 1544 5	34130	1
Americium 241	U	0.0431	+/ 0.0977	0.0813	+/ 0.0977	0.168	pCi/g					
Bismuth 212		0.570	+/ 0.292	0.144	+/ 0.292	0.309	pCi/g					
Bismuth 214		0.568	+/ 0.0877	0.0366	+/ 0.0877	0.0777	pCi/g					
Cesium 134	U	0.0314	+/ 0.0354	0.0253	+/ 0.0354	0.0538	pCi/g					
Cesium 137		0.396	+/ 0.0588	0.0193	+/ 0.0588	0.0412	pCi/g					
Cobalt 60		0.133	+/ 0.0554	0.0195	+/ 0.0554	0.0431	pCi/g					
Europium 152	U	0.00717	+/ 0.0581	0.0513	+/ 0.0581	0.108	pCi/g					
Europium 154	U	0.040	+/ 0.0643	0.0578	+/ 0.0643	0.127	pCi/g					
Europium 155	U	0.0854	+/ 0.0769	0.0548	+/ 0.0769	0.113	pCi/g					
Lead 212		0.772	+/ 0.0707	0.0295	+/ 0.0707	0.0615	pCi/g					
Lead 214		0.585	+/ 0.0841	0.0353	+/ 0.0841	0.0742	pCi/g					
Manganese 54	U	0.0123	+/ 0.0261	0.0208	+/ 0.0261	0.0446	pCi/g					
Niobium 94	U	0.000522	+/ 0.0212	0.0176	+/ 0.0212	0.0375	pCi/g					
Potassium 40		12.1	+/ 0.950	0.178	+/ 0.950	0.396	pCi/g					
Radium 226		0.568	+/ 0.0877	0.0366	+/ 0.0877	0.0777	pCi/g					
Silver 108m	U	0.00495	+/ 0.0195		+/ 0.0195	0.0361	pCi/g					
Thallium 208		0.300	+/ 0.0497	0.0177	+/ 0.0497	0.0379	pCi/g					
<b>Rad Gas Flow Proportion</b>	nal Countin	g										
GFPC, Sr90, solid ALL	FSS											
Strontium 90	U	0.00579	+/ 0.0116	0.0116	+/ 0.0116	0.0264	pCi/g	BXF1	06/22/0	06 1035 5	36483	2
Rad Liquid Scintillation	-						PB					-
Liquid Scint Ni63, Solid	ALL FSS											
Nickel 63	U	0.233	+/ 7.56	6.34	+/ 7.56	12.9	pCi/g	SLN1	06/20/0	06 0726 5	538365	3

# Method Description Analyst Ash Soil Prep Ash Soil Prep. GL RAD A 021B LXM2

Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049	
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048	
The following A Method	Analytical Methods were performed Description					

Date

**Prep Batch** 

Time

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

# **<u>Certificate of Analysis</u>**

	Company : Address :	Connecticut 362 Injun He		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 00	Carthy	ticut 06424				A	Report Date: June 23	, 2006
		Client Sam Sample ID			9106 0008 163741001			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Da	te Time Batch Mto
1	EML	HASL 300, 4.	5.2.3							
2	EPA 9	905.0 Modifie	d							
3	DOE	RESL Ni 1, N	Aodified							
Surrogate/	Tracer recov	ery Test			F	Recovery%	A	cceptable Limi	ts	
Carrier/Trac	er Recovery	GFP	C, Sr90, so	lid ALL FSS		72		(25% 125%)		
Carrier/Trac	cer Recovery	Liqui	id Scint Ni	63, Solid ALL	, FS	72		(25% 125%)		
	get analyte v	operiou uluo		sation produc						

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

# **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power								
Contact: Project:	East Hampt Mr. Jack Mo Soils PO# 0	cCarthy	ticut 06424				A	Report Date: Jur	ne 23, 20	06	
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	); ite:		9106 00 1637410 SE 05 MA 26 MA Client 57.6%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch	Mtd
Rad Gamma Spec Anal	ysis										
Gamma, Solid FSS GA	M & ALL FSS	7									
Actinium 228		1.09	+/ 0.203	0.0952	+/ 0.203	0.201	pCi/g	МЈН1	06/15/0	6 1544 534130	1
Americium 241	U	0.0256	+/ 0.140	0.082	+/ 0.140	0.169	pCi/g				
Bismuth 212		0.673	+/ 0.467	0.181	+/ 0.467	0.382	pCi/g				
Bismuth 214		0.775	+/ 0.123	0.0437	+/ 0.123	0.0917	pCi/g				
Cesium 134	U	0.0459	+/ 0.0366		+/ 0.0366	0.0672	pCi/g				
Cesium 137		0.205	+/ 0.0706		+/ 0.0706	0.0479	pCi/g				
Cobalt 60		0.324	+/ 0.0774		+/ 0.0774	0.0625	pCi/g				
Europium 152	U	0.020	+/ 0.073	0.0599	+/ 0.073	0.124	pCi/g				
Europium 154	U	0.00145	+/ 0.104	0.0855	+/ 0.104	0.182	pCi/g				
Europium 155	U	0.0192	+/ 0.074	0.0571	+/ 0.074	0.117	pCi/g				
Lead 212		1.16	+/ 0.083	0.033	+/ 0.083	0.0682	pCi/g				
Lead 214		0.886	+/ 0.110	0.0409	+/ 0.110	0.0851	pCi/g				
Manganese 54	U	0.0289	+/ 0.0456		+/ 0.0456	0.0516	pCi/g				
Niobium 94	U	0.0236 16.2	+/ 0.0269	0.0208	+/ 0.0269	0.0439 0.487	pCi/g				
Potassium 40		0.775	+/ 1.14 +/ 0.123	0.223	+/ 1.14 +/ 0.123	0.487	pCi/g				
Radium 226 Silver 108m	U	0.00754	+/ 0.123		+/ 0.123	0.0917	pCi/g				
Thallium 208	U	0.00734	+/ 0.0238		+/ 0.0238	0.0437	pCi/g pCi/g				
Rad Gas Flow Proportion	onal Counting		+/ 0.0070	0.0222	+/ 0.0070	0.0408	peng				
-		5									
GFPC, Sr90, solid AL							<b>C</b> 11				•
Strontium 90	U	0.0112	+/ 0.0174	0.0173	+/ 0.0174	0.0387	pCi/g	BXF1	06/18/0	6 1006 536483	2
Rad Liquid Scintillatior	ı Analysis										
Liquid Scint Ni63, Solid	d ALL FSS										
Nickel 63	U	2.74	+/ 5.74	4.87	+/ 5.74	9.92	pCi/g	SLN1	06/20/0	6 0813 538365	3

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

The following Analytical Methods were performed

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Method Description EML HASL 300, 4.5.2.3

1

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# **Certificate of Analysis**

	Company : Address :	Connecticu 362 Injun H		tomic Power						
	Contact: Project:	East Hamp Mr. Jack M Soils PO# (	lcCarthy	cticut 06424				H	Report Date: June 23, 2	006
		Client Sar Sample II			9106 00 1637410			Project: Client ID: Vol. Recv.:		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
2	EPA 9	05.0 Modifi	ed							•
3	DOE	RESL Ni 1,	Modified							
Surrogate/	Tracer recov	ery Tes	t			Recovery%	Acce	eptable Limi	ts	
Carrier/Trac	er Recovery	GFI	PC, Sr90, so	olid ALL FSS		71	()	25% 125%)		
Carrier/Trac	er Recovery	Liqu	uid Scint N	i63, Solid ALL	FS	83	()	25% 125%)		
* A q	lifiers in this uality contro ult is less that	l analyte re	covery is	follows : outside of spec	cified acce	ptance criteria	3			

- > 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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier Х
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/ RL. Concentrations are <5X the RL
- Preparation or preservation holding time was exceeded h

The above sample is reported on a dry weight basis.

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# **Certificate of Analysis**

1 2	Connecticut 362 Injun He		tomic Power									
Contact:	East Hampto Mr. Jack Mc Soils PO# 0	Carthy	ticut 06424				R	eport Da	ate: Jur	ie 23, 20	006	
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	te:		9106 00 1637410 SE 05 MA 26 MA Client 63.5%	Y 06		Project: Client ID: Vol. Recv.:	YANI YANI	(01204 (001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analys	t Date	Time Bat	ch Mtd
Rad Gamma Spec Analys	sis										·	
Gamma, Solid FSS GAM	& ALL FSS											
Actinium 228		1.02	+/ 0.200	0.0517	+/ 0.200	0.109	pCi/g		MJH1	06/15/0	6 1544 534	130 1
Americium 241	U	0.0417	+/ 0.0743		+/ 0.0743	0.125	pCi/g					
Bismuth 212		0.935	+/ 0.288	0.128	+/ 0.288	0.269	pCi/g					
Bismuth 214		0.581	+/ 0.112	0.0343	+/ 0.112	0.0712	pCi/g					
Cesium 134	U	0.0381	+/ 0.0469		+/ 0.0469	0.0448	pCi/g					
Cesium 137		0.0432	+/ 0.036	0.016	+/ 0.036	0.0334	pCi/g					
Cobalt 60	UI	0.00	+/ 0.0268		+/ 0.0268	0.0538	pCi/g					
Europium 152	U	0.00954	+/ 0.0498		+/ 0.0498	0.0841	pCi/g					
Europium 154	UU	0.0501	+/ 0.0608 +/ 0.0739		+/ 0.0608	0.0975 0.104	pCi/g					
Europium 155 Lead 212	U	0.0526 0.937			+/ 0.0739 +/ 0.0965	0.104	pCi/g					
Lead 212 Lead 214		0.937	+/ 0.0965 +/ 0.119	0.0233	+/ 0.0965	0.052	pCi/g pCi/g					
Manganese 54	U	0.0116	+/ 0.0212		+/ 0.0212	0.0357	pCi/g pCi/g					
Niobium 94	U	0.00493	+/ 0.018	0.0153	+/ 0.018	0.0319	pCi/g pCi/g					
Potassium 40	U	13.6	+/ 1.14	0.136	+/ 1.14	0.295	pCi/g					
Radium 226		0.581	+/ 0.112	0.0343	+/ 0.112	0.0712	pCi/g					
Silver 108m	U	0.0039	+/ 0.0169		+/ 0.0169	0.0283	pCi/g					
Thallium 208		0.234	+/ 0.0565		+/ 0.0565	0.0328	pCi/g					
<b>Rad Gas Flow Proportion</b>	al Counting	Ş										
GFPC, Sr90, solid ALL	ESS	-										
Strontium 90	U	0.00619	+/ 0.0127	0.0157	+/ 0.0127	0.0354	pCi/g		BXF1	06/18/0	)6 1006 536	483 2
Rad Liquid Scintillation A		0.00017		0.0107	., 0.012/	0.0554	P~"5		2411 1	00,10,0		2
Liquid Scint Ni63, Solid	ALL FSS											
Nickel 63	U	1.8	+/ 4.81	4.07	+/ 4.81	8.29	pCi/g		SLN1	06/20/0	06 0901 538	365 3

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

Method Description

EML HASL 300, 4.5.2.3

1

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# **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	eticut 06424				I	Report Date: June 23, 20	006
		Client Sam Sample ID			9106 000 16374100			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	ſ
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
2	EPA 9	05.0 Modifie	d							
3	DOE F	RESL Ni 1, N	Modified							
Surrogate/	Tracer recove	ery Test				Recovery%	A	cceptable Limi	its	
Carrier/Trac	cer Recovery	GFP	C, Sr90, so	olid ALL FSS		74		(25% 125%)		······
Carrier/Trac	er Recovery	Liqui	id Scint Ni	63, Solid ALL	FS	78		(25% 125%)		
Notes: The Qua	lifiers in this	report are d	efined as	follows :						
< Res > Res	sult is less that sult is greater	in value repo than value r	orted reported	outside of spec	-	tance criteria	1			

- Α 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
- Х 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 : Address :	Connecticut 362 Injun H		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	ticut 06424				R	eport D	ate: Jur	ne 23, 20	006	
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	): ite:		9106 00 1637410 SE 05 MA <sup>*</sup> 26 MA <sup>*</sup> Client 57.1%	Y 06		Project: Client ID: Vol. Recv.:	YANI YANI	K01204 K001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analys	t Date	Time Batch	Mtd
Rad Gamma Spec Analy	sis											
Gamma, Solid FSS GAN	M & ALL FSS											
Actinium 228		0.859	+/ 0.224	0.0761	+/ 0.224	0.170	pCi/g		MJH1	06/15/0	06 1650 534130	0 1
Americium 241	U	0.000334	+/ 0.0393		+/ 0.0393	0.0687	pCi/g					
Bismuth 212		0.612	+/ 0.380	0.239	+/ 0.380	0.512	pCi/g					
Bismuth 214		0.792	+/ 0.157	0.0434	+/ 0.157	0.0941	pCi/g					
Cesium 134	U	0.0388	+/ 0.0682		+/ 0.0682	0.0708	pCi/g					
Cesium 137		0.266	+/ 0.0822		+/ 0.0822	0.0607	pCi/g					
Cobalt 60	U	0.0275	+/ 0.0345		+/ 0.0345	0.0696	pCi/g					
Europium 152	U	0.0306	+/ 0.0864		+/ 0.0864	0.150	pCi/g					
Europium 154	U	0.0128	+/ 0.0977		+/ 0.0977	0.182	pCi/g					
Europium 155 Lead 212	U	0.0403 0.757	+/ 0.0709	0.0602	+/ 0.0709	0.125	pCi/g					
Lead 212 Lead 214		0.737	+/ 0.122 +/ 0.132	0.0365	+/ 0.122 +/ 0.132	0.0764 0.106	pCi/g					
Manganese 54	UI	0.077	+/ 0.132		+/ 0.132	0.106	pCi/g					
Niobium 94	U	0.00	+/ 0.0933	0.0203	+/ 0.0933	0.0379	pCi/g pCi/g					
Potassium 40	U	12.4	+/ 1.44	0.0222	+/ 0.030	0.598	pCi/g pCi/g					
Radium 226		0.792	+/ 0.157	0.0434	+/ 0.157	0.0941	pCi/g					
Silver 108m	U	0.0184	+/ 0.0271		+/ 0.0271	0.0458	pCi/g					
Thallium 208	0	0.262	+/ 0.0789		+/ 0.0789	0.0478	pCi/g					
Rad Gas Flow Proportio	nal Counting		., 0.0705	0.0217		0.0170	pong					
GFPC, Sr90, solid ALL		•										
Strontium 90		0.000828	+/ 0.0152	0.0160	+/ 0.0152	0.0376	nCi/a		DVEI	06/19/	06 1006 536483	2 2
Rad Liquid Scintillation	-	0.000028	·T/ 0.0132	0.0109	+/ 0.0152	0.0370	pCi/g		σλγι	00/18/0	0 1000 33048.	5 2
Liquid Scint Ni63, Solid	•											
Nickel 63	U	0.858	+/ 4.37	3.69	+/ 4.37	7.51	pCi/g		SLN1	06/20/0	06 0948 53836:	53

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

The following Analytical Methods were performed

Method Description EML HASL 300, 4.5.2.3

1

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# **Certificate of Analysis**

	Company : Address :	Connecticu 362 Injun H		tomic Power								
	Contact:	East Hampt Mr. Jack M		cticut 06424				R	eport D	ate: June 23, 2	006	
	Project:	Soils PO# (	)02332									
		Client Sar Sample II			9106 0008 163741004			Project: Client ID: Vol. Recv.:	YANI YANI	K01204 K001		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst Date	Time Batch N	/Itd
2	EPA 9	05.0 Modifie	ed									
3	DOE F	RESL Ni 1,	Modified									
Surrogate/	Tracer recove	ery Test	t		]	Recovery%	А	cceptable Limit	ts			
Carrier/Trac	er Recovery	GFF	<sup>2</sup> C, Sr90, so	olid ALL FSS		78		(25% 125%)				
Carrier/Trac	er Recovery	Liqu	uid Scint N	i63, Solid ALL	FS	80		(25% 125%)				
Notes: The Qua	lifiers in this	report are o	defined as	follows :								
* Aq	uality control	l analyte re	covery is	outside of spec	ified accept	ance criteria	ı					
	sult is less that											
	sult is greater		-									
				sation product								
				sociated blank r tracer recove								
	alyte has been				Ay 15 10W							

- 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
- Х 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 : Address :	Connecticut 362 Injun H		tomic Power								
Contact: Project:	East Hampt Mr. Jack Me Soils PO# 0	cCarthy	ticut 06424				R	Report Date: Jur	ne 23, 20	006	
	Client San Sample III Matrix: Collect Da Receive D Collector: Moisture:	): ate: bate:		9106 00 1637410 SE 05 MA 26 MA Client 30.9%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch M	td
Rad Gamma Spec Analy											_
Gamma, Solid FSS GAN	M & ALL FSS										
Actinium 228		0.813	+/ 0.227	0.0748	+/ 0.227	0.160	pCi/g	MJH1	06/15/0	06 1838 534130	1
Americium 241	U	0.0977	+/ 0.116	0.0927	+/ 0.116	0.191	pCi/g				
Bismuth 212		0.817	+/ 0.336	0.146	+/ 0.336	0.311	pCi/g				
Bismuth 214	<b>T</b> 1 <b>T</b>	0.624	+/ 0.109	0.0355	+/ 0.109	0.0751	pCi/g				
Cesium 134	UI	0.00 0.492	+/ 0.0387 +/ 0.0725		+/ 0.0387 +/ 0.0725	0.0562 0.0452	pCi/g pCi/g				
Cesium 137 Cobalt 60		0.492	+/ 0.0723	0.0214	+/ 0.0723	0.0432	pCi/g pCi/g				
Europium 152	U	0.0151	+/ 0.098		+/ 0.0601	0.102	pCi/g pCi/g				
Europium 154		0.000763	+/ 0.0759		+/ 0.0759	0.138	pCi/g				
Europium 155	Ŭ	0.0672	+/ 0.0612		+/ 0.0612	0.116	pCi/g				
Lead 212	Ũ	0.873	+/ 0.0951		+/ 0.0951	0.0622	pCi/g				
Lead 214		0.720	+/ 0.120	0.0351	+/ 0.120	0.0735	pCi/g				
Manganese 54	U	0.0138	+/ 0.0283	0.0242	+/ 0.0283	0.0511	pCi/g				
Niobium 94	U	0.00895	+/ 0.0211	0.0171	+/ 0.0211	0.0363	pCi/g				
Potassium 40		13.7	+/ 1.37	0.145	+/ 1.37	0.330	pCi/g				
Radium 226		0.624	+/ 0.109	0.0355	+/ 0.109	0.0751	pCi/g				
Silver 108m	U	0.00177	+/ 0.0192	0.0168	+/ 0.0192	0.0354	pCi/g				
Thallium 208		0.298	+/ 0.0652	0.0195	+/ 0.0652	0.0413	pCi/g				
<b>Rad Gas Flow Proportio</b>	nal Counting	g									
GFPC, Sr90, solid ALL	L FSS										
Strontium 90	U	0.00559	+/ 0.013	0.0132	+/ 0.013	0.0302	pCi/g	BXF1	06/22/0	06 1035 536483	2
<b>Rad Liquid Scintillation</b>	Analysis										
Liquid Scint Ni63, Solid	ALL FSS										
Nickel 63	U	2.28	+/ 10.1	8.45	+/ 10.1	17.2	pCi/g	SLN1	06/20/0	06 1035 538365	3

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

The following Analytical Methods were performed

Method Description EML HASL 300, 4.5.2.3

1

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### **Certificate of Analysis**

	502 injun m	ollow Rd									
Contact:		Carthy	ticut 06424				R	leport D	ate: June 23, 20	006	
						(					
	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst Date	Time Batch	Mtd
EPA 9	05.0 Modified	d									
DOE R	RESL Ni 1, N	Aodified									
racer recove	ery Test				Recovery%	Acce	ptable Limi	ts			
r Recovery	GFPG	C, Sr90, so	lid ALL FSS		59	(2	5% 125%)				-
r Recovery	Liqui	id Scint Ni	63, Solid ALL	FS	54	(2	5% 125%)				
ality control	l analyte rec	overy is o		ified accer	otance criteria	L					
	DOE I racer recovery r Recovery fiers in this ality contro	Project: Soils PO# 0 Client Sam Sample ID Qualifier EPA 905.0 Modifie DOE RESL Ni 1, N racer recovery Test r Recovery GFP4 r Recovery Liqu fiers in this report are d ality control analyte rec	Project: Soils PO# 002332 Client Sample ID: Sample ID: Qualifier Result EPA 905.0 Modified DOE RESL Ni 1, Modified Tacer recovery Test r Recovery GFPC, Sr90, so r Recovery Liquid Scint Ni fiers in this report are defined as	Project: Soils PO# 002332 Client Sample ID: Sample ID: Qualifier Result Uncertainty EPA 905.0 Modified DOE RESL Ni 1, Modified racer recovery Test r Recovery GFPC, Sr90, solid ALL FSS r Recovery Liquid Scint Ni63, Solid ALL fiers in this report are defined as follows : ality control analyte recovery is outside of spec	Project:       Soils PO# 002332         Client Sample ID:       9106 000         Sample ID:       16374100         Qualifier       Result       Uncertainty       LC         EPA 905.0 Modified       DOE RESL Ni 1, Modified         DOE RESL Ni 1, Modified       racer recovery       Test         r Recovery       GFPC, Sr90, solid ALL FSS         r Recovery       Liquid Scint Ni63, Solid ALL FS         fiers in this report are defined as follows :       ality control analyte recovery is outside of specified acception	Project:       Soils PO# 002332         Client Sample ID:       9106 0008 006F         Sample ID:       163741005         Qualifier       Result       Uncertainty       LC         EPA 905.0 Modified       DOE RESL Ni 1, Modified         DOE RESL Ni 1, Modified       Recovery%         racer recovery       Test       Recovery%         r Recovery       GFPC, Sr90, solid ALL FSS       59         r Recovery       Liquid Scint Ni63, Solid ALL FS       54         fiers in this report are defined as follows :       ality control analyte recovery is outside of specified acceptance criteria	Project:       Soils PO# 002332         Client Sample ID:       9106 0008 006F         Sample ID:       163741005         Qualifier       Result         Uncertainty       LC         TPU       MDA         EPA 905.0 Modified         DOE RESL Ni       1, Modified         racer recovery       Test         Recovery%       Acception         r Recovery       GFPC, Sr90, solid ALL FSS       59         r Recovery       Liquid Scint Ni63, Solid ALL FS       54         fiers in this report are defined as follows :       ality control analyte recovery is outside of specified acceptance criteria	Project:       Soils PO# 002332         Client Sample ID:       9106 0008 006F       Project: Client ID: Vol. Recv.:         Qualifier       Result       Uncertainty       LC       TPU       MDA       Units         EPA 905.0 Modified       DOE RESL Ni 1, Modified	Project:       Soils PO# 002332         Client Sample ID:       9106 0008 006F       Project:       YANI         Sample ID:       163741005       Client ID:       YANI         Qualifier       Result       Uncertainty       LC       TPU       MDA       Units       DF         EPA 905.0 Modified       DOE RESL Ni       1, Modified                       DF               DF             DF                DF	Project:       Soils PO# 002332         Client Sample ID:       9106 0008 006F       Project:       YANK01204         Sample ID:       163741005       Client ID:       YANK001         Qualifier       Result       Uncertainty       LC       TPU       MDA       Units       DF Analyst Date         EPA 905.0 Modified       DOE RESL Ni 1, Modified       EPA 905.0 Modified       Vol. Recv.:       Vol. Recv.:       Vol. Recv.:         racer recovery       Test       Recovery%       Acceptable Limits       Vol. Recv.:       Vol. Recv.:         r Recovery       GFPC, Sr90, solid ALL FSS       59       (25% 125%)       Vol. Recv.:       Vol. Recv.:         fiers in this report are defined as follows :       ality control analyte recovery is outside of specified acceptance criteria       Vol. Recv.:       Vol. Recv.:	Project:       Soils PO# 002332         Client Sample ID:       9106 0008 006F       Project::       YANK01204         Sample ID:       163741005       Client ID:       YANK001         Qualifier       Result       Uncertainty       LC       TPU       MDA       Units       DF Analyst Date       Time Batch         EPA 905.0 Modified       DOE RESL Ni       1, Modified       Fracer recovery       Test       Recovery%       Acceptable Limits         r Recovery       GFPC, Sr90, solid ALL FSS       59       (25% 125%)       125%)         fiers in this report are defined as follows :       ality control analyte recovery is outside of specified acceptance criteria       Secoretrian

- > Result is greater than value reported
- А The TIC is a suspected aldol condensation product
- Target analyte was detected in the associated blank В
- 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
- Value is estimated J

N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more

- R Sample results are rejected
- Analyte was analyzed for, but not detected above the MDL, MDA, or LOD. U
- UI Gamma Spectroscopy Uncertain identification
- Х Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- $^{\wedge}$ RPD of sample and duplicate evaluated using +/ RL. Concentrations are <5X the RL
- Preparation or preservation holding time was exceeded h

The above sample is reported on a dry weight basis.

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# **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power								
Contact: Project:	East Hampt Mr. Jack M Soils PO# (	cCarthy	ticut 06424				R	eport Date: Jui	ne 23, 20	006	
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	D: ate:		9106 00 1637410 SE 05 MAY 26 MAY Client 40.3%	r 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch	Mtd
Rad Gamma Spec Analy	/sis							, ,, , , ,			
Gamma,Solid FSS GA	M & ALL FSS	5									
Actinium 228		1.01	+/ 0.284	0.111	+/ 0.284	0.236	pCi/g	MJH1	06/15/	06 1953 534130	1
Americium 241	U	0.0585	+/ 0.0523	0.0334	+/ 0.0523	0.0689	pCi/g				
Bismuth 212		0.587	+/ 0.428	0.199	+/ 0.428	0.427	pCi/g				
Bismuth 214		0.694	+/ 0.162	0.0485	+/ 0.162	0.103	pCi/g				
Cesium 134	U	0.0331	+/ 0.0414		+/ 0.0414	0.0791	pCi/g				
Cesium 137		0.601	+/ 0.100	0.0292	+/ 0.100	0.0619	pCi/g				
Cobalt 60		1.34	+/ 0.140	0.024	+/ 0.140	0.0539	pCi/g				
Europium 152	U	0.00817	+/ 0.0797		+/ 0.0797	0.144	pCi/g				
Europium 154	U	0.0337	+/ 0.0957		+/ 0.0957	0.167	pCi/g				
Europium 155	U	0.106	+/ 0.115	0.0619	+/ 0.115	0.128	pCi/g				
Lead 212		0.866	+/ 0.135	0.0461	+/ 0.135	0.0951	pCi/g				
Lead 214		0.763	+/ 0.147	0.0479	+/ 0.147	0.101	pCi/g				
Manganese 54	U	0.0198	+/ 0.0388		+/ 0.0388	0.0728	pCi/g				
Niobium 94	U	0.0228	+/ 0.0306		+/ 0.0306	0.0499	pCi/g				
Potassium 40		14.9	+/ 1.49	0.237	+/ 1.49	0.532	pCi/g				
Radium 226		0.694	+/ 0.162	0.0485	+/ 0.162	0.103	pCi/g				
Silver 108m	U	0.000651	+/ 0.0283		+/ 0.0283	0.0504	pCi/g				
Thallium 208		0.360	+/ 0.073	0.0275	+/ 0.073	0.0585	pCi/g				
Rad Gas Flow Proportion		g									
GFPC, Sr90, solid ALI											
Strontium 90		0.000875	+/ 0.0141	0.0156	+/ 0.0141	0.0355	pCi/g	BXF1	06/18/	06 1007 536483	2
Rad Liquid Scintillation	Analysis										
Liquid Scint Ni63, Solia	ALL FSS										
Nickel 63	U	0.188	+/ 6.10	5.12	+/ 6.10	10.4	pCi/g	SLN1	06/20/	06 1122 538365	53

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

Description Method

1

EML HASL 300, 4.5.2.3

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## **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun H		tomic Power							
	Contact:	East Hampt Mr. Jack Me		cticut 06424				F	Report D	ate: June 23, 20	006
	Project:	Soils PO# 0	02332								
		Client San Sample ID			9106 000 16374100			Project: Client ID: Vol. Recv.:	YAN	K01204 K001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	' Analyst Date	Time Batch Mtd
2	EPA 9	05.0 Modifie	:d								
3	DOE	RESL Ni 1, 1	Modified								
Surrogate/	Tracer recov	ery Test				Recovery%	А	cceptable Limi	ts		
Carrier/Trac	er Recovery	GFP	C, Sr90, so	olid ALL FSS		71		(25% 125%)			
Carrier/Trac	cer Recovery	Liqu	id Scint N	i63, Solid ALL	FS	84		(25% 125%)			
Notes: The Qua	lifiers in this	report are d	lefined as	follows :							
< Res > Res	sult is less the sult is greater e TIC is a su	an value rep than value	orted reported l conden	outside of spec	-	tance criteria	1				

- 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
- Results are reported from a diluted aliquot of the sample D
- H Analytical holding time was exceeded
- Value is estimated J

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
- Х Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Λ 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**

Compan Address	•		tomic Power								
Contact: Project:	East Hampt Mr. Jack M Soils PO# (	cCarthy	ticut 06424				R	eport Date: Jur	ie 23, 20	06	
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	D: ate: Date:		9106 00 1637410 SE 05 MA 26 MA Client 40.6%	r 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch	Mtd
Rad Gamma Spec A	nalysis										
Gamma, Solid FSS	GAM & ALL FSS	5									
Actinium 228		1.20	+/ 0.150	0.0467	+/ 0.150	0.0976	pCi/g	MJH1	06/15/0	6 1953 534130	1
Americium 241	U	0.0887	+/ 0.0966		+/ 0.0966	0.150	pCi/g				
Bismuth 212		0.731	+/ 0.231	0.102	+/ 0.231	0.213	pCi/g				
Bismuth 214		0.791	+/ 0.0864		+/ 0.0864	0.0516	pCi/g				
Cesium 134	UI	0.00	+/ 0.022	0.0171	+/ 0.022	0.0355	pCi/g				
Cesium 137	U	0.00891	+/ 0.0193		+/ 0.0193	0.0275	pCi/g				
Cobalt 60	U	0.00777	+/ 0.0188		+/ 0.0188	0.0329	pCi/g				
Europium 152	U	0.00544	+/ 0.0415		+/ 0.0415	0.0722	pCi/g				
Europium 154	U	0.0213	+/ 0.0532		+/ 0.0532	0.0929	pCi/g				
Europium 155	U	0.0635	+/ 0.0805		+/ 0.0805	0.0869	pCi/g				
Lead 212		1.24	+/ 0.0603		+/ 0.0603	0.0429	pCi/g				
Lead 214		0.965	+/ 0.081	0.0252	+/ 0.081	0.0519	pCi/g				
Manganese 54	U	0.0116	+/ 0.0185		+/ 0.0185	0.0331	pCi/g				
Niobium 94	U	0.000167	+/ 0.016	0.0129	+/ 0.016	0.0268	pCi/g				
Potassium 40		18.2	+/ 0.772	0.121	+/ 0.772	0.257	pCi/g				
Radium 226		0.791	+/ 0.0864		+/ 0.0864	0.0516	pCi/g				
Silver 108m	U	0.00521	+/ 0.0142		+/ 0.0142	0.0242	pCi/g				
Thallium 208		0.332	+/ 0.0409	0.0136	+/ 0.0409	0.0281	pCi/g				
Rad Gas Flow Propo		g									
GFPC, Sr90, solid											
Strontium 90	U	0.0203	+/ 0.0201	0.0182	+/ 0.0201	0.0413	pCi/g	BXF1	06/18/0	6 1007 536483	2
Rad Liquid Scintillat	tion Analysis										
Liquid Scint Ni63, S	olid ALL FSS										
Nickel 63	U	4.84	+/ 5.47	4.68	+/ 5.47	9.53	pCi/g		~ ~ . ~ ~	6 1209 538365	

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

Method Description

ł EML HASL 300, 4.5.2.3

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### **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun H		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	eticut 06424				R	eport Date: June 23, 20	006
		Client San Sample ID			9106 00 1637410	08 002F 07		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
2	EPA 9	05.0 Modifie	d							
3	DOE	RESL Ni 1, N	Modified							
Surrogate/	Tracer recov	ery Test				Recovery%	Ac	ceptable Limit	5	
Carrier/Trac	er Recovery	GFP	C, Sr90, sc	olid ALL FSS		65		(25% 125%)		· · · · · · · · · · · · · · · · · · ·
Carrier/Trac	er Recovery	Liqu	id Scint Ni	i63, Solid ALL	FS	84		(25% 125%)		
Notes: The Qua	lifiers in this	s report are d	lefined 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
- The TIC is a suspected aldol condensation product Α
- Target analyte was detected in the associated blank B
- 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

Preparation or preservation holding time was exceeded h

The above sample is reported on a dry weight basis.

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# **Certificate of Analysis**

Company Address :	Connecticut 362 Injun H		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	ticut 06424				Ą	Report Date: Jui	ne 23, 20	)06		
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	te:		9106 00 1637410 SE 05 MA 26 MA Client 36.4%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time B	latch I	vItd
Rad Alpha Spec Analys	sis											
Alphaspec Am241, Cm	, Solid ALL FS	S										
Americium 241	U	0.0496	+/ 0.0968	0.062	+/ 0.097	0.209	pCi/g	JXG1	06/16/0	06 1312 5	37411	1
Curium 242	U	0.00	+/ 0.0738		+/ 0.0738	0.102	pCi/g					
Curium 243/244	U	0.00883	+/ 0.0669	0.0622	+/ 0.0669	0.210	pCi/g					
Alphaspec Pu, Solid							~					
Plutonium 238	U	0.00	+/ 0.110	0.00	+/ 0.110	0.151	pCi/g	JXG1	06/16/0	06 0928 5	37412	2
Plutonium 239/240	U	0.226	+/ 0.163	0.292	+/ 0.165	0.734	pCi/g					
Liquid Scint Pu241, Sc		4.00	1/ (10	5.00		10.4	-Cile	INCI	00/20/0	AC 1000 E	27417	2
Plutonium 241 Rad Gamma Spec Ana	U Iveie	4.08	+/ 6.18	5.06	+/ 6.19	10.4	pCi/g	JXG1	00/20/0	06 1900 5	5/41/	3
_	-	,										
Gamma, Solid FSS GA Actinium 228	AM & ALL FSS	0.525	+/ 0.175	0.0766	+/ 0.175	0.165	pCi/g	MILI	06/15/0	06 2141 5	24120	4
Americium 241	U	0.323	+/ 0.173	0.0786	+/ 0.173	0.103	pCi/g pCi/g	NJTI	00/15/0	<i>J</i> O 2141 <i>J</i>	54150	4
Bismuth 212	0	0.357	+/ 0.278	0.166	+/ 0.278	0.355	pCi/g					
Bismuth 214		0.536	+/ 0.095	0.0335	+/ 0.095	0.0718	pCi/g					
Cesium 134	U	0.0289	+/ 0.0399	0.0228	+/ 0.0399	0.049	pCi/g					
Cesium 137	U	0.0229	+/ 0.0249	0.0227	+/ 0.0249	0.0481	pCi/g					
Cobalt 60	U	0.0268	+/ 0.0279		+/ 0.0279	0.0529	pCi/g					
Europium 152	U	0.0567	+/ 0.0559		+/ 0.0559	0.106	pCi/g					
Europium 154	U	0.0459 0.0973	+/ 0.066	0.0605	+/ 0.066	0.133	pCi/g					
Europium 155 Lead 212	U	0.0973	+/ 0.107 +/ 0.0898	0.0529	+/ 0.107 +/ 0.0898	0.110 0.0627	pCi/g pCi/g					
Lead 212		0.622	+/ 0.106	0.0301	+/ 0.106	0.0027	pCi/g pCi/g					
Manganese 54	U	0.0153	+/ 0.0291		+/ 0.0291	0.0437	pCi/g					
Niobium 94	U	0.00868	+/ 0.0196		+/ 0.0196	0.0342	pCi/g					
Potassium 40		13.1	+/ 1.34	0.166	+/ 1.34	0.378	pCi/g					
Radium 226		0.536	+/ 0.095	0.0335	+/ 0.095	0.0718	pCi/g					
Silver 108m	U	0.00104	+/ 0.0168		+/ 0.0168	0.032	pCi/g					
Thallium 208 Red Cas Flow Propert	ional Counting	0.225	+/ 0.0465	0.0196	+/ 0.0465	0.0418	pCi/g					
Rad Gas Flow Proport		5										
GFPC, Sr90, solid Al		0 000001	1/ 0.0151	0.0171	1/ 0.0151	0.020	-01-	DVP1	04/10/	AC 1007 5	26102	F
Strontium 90 Rad Liquid Scintillatio		0.000881	+/ 0.0151	0.0171	+/ 0.0151	0.038	pCi/g	BYLI	00/18/(	06 1007 5	50485	3
-	•	FCC										
LSC, Tritium Dist, Sol. Tritium	U	FSS 4.94	+/ 6.95	5.56	+/ 6.95	11.7	pCi/g	NXP1	06/17/(	06 1609 5	35984	6
Liquid Scint C14, Solid	d All,FSS											

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# **Certificate of Analysis**

Contact: Mr.	•	n, Connec	himut 06424									
Floject. Solia	Jack Mc s PO# 00	Carthy	ucut 00424				Ą	leport Date: Jun	e 23, 200	6		·
	ent Sam nple ID:			9106 00 1637410	008 007F 108		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter Qu	alifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Anal	ysis											
Liquid Scint C14, Solid All,FS	SS											
Carbon 14	U	0.015	+/ 0.126	0.106	+/ 0.126	0.216	pCi/g	ATH2	06/04/06	6 0432	534837	7
Liquid Scint Fe55, Solid ALL	L FSS											
Iron 55	U	21.1	+/ 18.3	13.0	+/ 18.5	27.4	pCi/g	SLN1	06/21/06	5 0813	538969	8
Liquid Scint Ni63, Solid ALL	L FSS											
Nickel 63	U	2.33	+/ 5.91	5.00	+/ 5.91	10.2	pCi/g	SLN1	06/20/06	5 1256	538365	9
Liquid Scint Tc99, Solid ALL	L FSS											
Technetium 99	U	0.196	+/ 0.227	0.184	+/ 0.227	0.380	pCi/g	SXE1	06/14/06	5 1714	536314	, 10

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL RAD A 021B	LXM2	05/28/06	1209	534049
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/26/06	1530	534048

#### 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 EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	83	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	47	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	94	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	79	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	83	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	80	(25% 125%)	

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## **Certificate of Analysis**

Parameter		Qualifier Result Uncertainty	LC TP	U MDA	Units	DF Analyst Date	Time Batch Mtd
		Client Sample ID: Sample ID:	9106 0008 00 163741008	7F	Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
	Project:	Soils PO# 002332					
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy			F	Report Date: June 23, 20	006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd					

84

(15% 125%)

Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS

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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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	eticut 06424				Report Date: June 23, 2006					
	Client Sam Sample ID Matrix: Collect Da Receive D Collector: Moisture:	e:		9106 00 1637410 SE 08 MA <sup>2</sup> 26 MA <sup>2</sup> Client 38.6%	Y 06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	1			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analy	st Date	Time Batch Mtd		
Rad Gamma Spec Analy												
Gamma, Solid FSS GA	M & ALL FSS											
Actinium 228		0.974	+/ 0.257	0.075	+/ 0.257	0.161	pCi/g	MJH1	06/15/	06 2153 534130 1		
Americium 241	U	0.0456	+/ 0.101	0.0814	+/ 0.101	0.169	pCi/g					
Bismuth 212		0.779	+/ 0.439	0.173	+/ 0.439	0.368	pCi/g					
Bismuth 214	••	0.569	+/ 0.134	0.0421	+/ 0.134	0.0889	pCi/g					
Cesium 134	U	0.0547	+/ 0.0378		+/ 0.0378	0.0605	pCi/g					
Cesium 137		0.472	+/ 0.0788		+/ 0.0788	0.0488	pCi/g					
Cobalt 60		0.917	+/ 0.101	0.0202	+/ 0.101	0.0446	pCi/g					
Europium 152	U	0.0108	+/ 0.0749		+/ 0.0749	0.118	pCi/g					
Europium 154	U	0.0271 0.00728	+/ 0.0787		+/ 0.0787	0.145	pCi/g					
Europium 155	U	0.00728	+/ 0.0765		+/ 0.0765	0.136	pCi/g					
Lead 212		0.929	+/ 0.106	0.0331 0.0402	+/ 0.106	0.069 0.0845	pCi/g					
Lead 214	U	0.729	+/ 0.114 +/ 0.0293		+/ 0.114 +/ 0.0293	0.0845	pCi/g					
Manganese 54 Niobium 94	U	0.030	+/ 0.0293		+/ 0.0293	0.0304	pCi/g pCi/g					
Potassium 40	U	14.5	+/ 1.35	0.0202	+/ 1.35	0.422	pCi/g					
Radium 226		0.569	+/ 0.134	0.0421	+/ 0.134	0.0889	pCi/g pCi/g					
Silver 108m	U	0.00585	+/ 0.0218		+/ 0.0218	0.0398	pCi/g					
Thallium 208	0	0.00303	+/ 0.0702		+/ 0.0702	0.0439	pCi/g					
Rad Gas Flow Proportio	nal Counting		., 0.0,02	0.0200		0.0157	P					
-	•	•										
GFPC, Sr90, solid ALI Strontium 90	U PSS	0.00269	+/ 0.0189	0.0214	±/ 0.0190	0.0476	nCi/a	DVE1	06/19/	06 1007 536483 2		
	-	0.00269	+/ 0.0189	0.0210	+/ 0.0189	0.0470	pCi/g	BAFI	00/18/	0 100/ 000483 2		
Rad Liquid Scintillation	•											
Liquid Scint Ni63, Solid												
Nickel 63	U	0.412	+/ 8.90	7.48	+/ 8.90	15.2	pCi/g	SLN1	06/20/	06 1343 538365 3		

The following Prep Methods were performed										
Method	Description	Analyst	Date	Time	Prep Batch					
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097					

#### 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 Address :	: Connecticut 362 Injun H		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	cticut 06424			Report Date: June 23, 2006						
	Client San Sample ID			9106 00 1637410	008 008F 109	C		YANI YANI	K01204 K001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst Date	Time Batch Mtd		
3 DO	E RESL Ni 1, N	Modified										
Surrogate/Tracer rec	overy Test				Recovery%	Accep	otable Limits					
Carrier/Tracer Recovery	GFP	C, Sr90, sc	olid ALL FSS		74	(2:	5% 125%)					
Carrier/Tracer Recovery	/ Liqu	id Scint Ni	i63, Solid ALL	FS	57	(2:	5% 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
- The TIC is a suspected aldol condensation product Α
- В Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- Analyte has been confirmed by GC/MS analysis С
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- Value is estimated J
- 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
- Х Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ۸ RPD of sample and duplicate evaluated using +/ RL. Concentrations are <5X the RL
- Preparation or preservation holding time was exceeded h

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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun Ho		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Report Date: June 23, 2006										
	Client Sam Sample ID: Matrix: Collect Dat Receive Da Collector: Moisture:	te:		9106 00 1637410 SE 08 MA 26 MA Client 36.8%	Y 06		Project: Client ID: Vol. Recv.:	YANK YANK	C01204 C001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analys	t Date	Time Batch	Mtd
Rad Gamma Spec Analy	'sis											
Gamma,Solid FSS GA	M & ALL FSS											
Actinium 228		0.741	+/ 0.207	0.0619	+/ 0.207	0.134	pCi/g		MJH1	06/16/0	06 0622 534130	1
Americium 241	U	0.0785	+/ 0.124	0.0788	+/ 0.124	0.163	pCi/g					
Bismuth 212		0.596	+/ 0.368	0.134	+/ 0.368	0.287	pCi/g					
Bismuth 214		0.667	+/ 0.109	0.0311	+/ 0.109	0.0663	pCi/g					
Cesium 134	U	0.0506	+/ 0.0431		+/ 0.0431	0.0516	pCi/g					
Cesium 137	U	0.0155	+/ 0.0231		+/ 0.0231	0.039	pCi/g					
Cobalt 60	U	0.0108	+/ 0.0254		+/ 0.0254	0.0443	pCi/g					
Europium 152	U	0.0723	+/ 0.0543		+/ 0.0543	0.0856	pCi/g					
Europium 154	U	0.051	+/ 0.0695		+/ 0.0695	0.117	pCi/g					
Europium 155	U	0.0418	+/ 0.0558		+/ 0.0558	0.106	pCi/g					
Lead 212		0.813	+/ 0.0899		+/ 0.0899	0.0589	pCi/g					
Lead 214		0.782	+/ 0.120	0.0326	+/ 0.120	0.0685	pCi/g					
Manganese 54	U	0.0123	+/ 0.0257		+/ 0.0257	0.0435	pCi/g					
Niobium 94	U	0.014	+/ 0.0192		+/ 0.0192	0.0361	pCi/g					
Potassium 40		14.8	+/ 1.41	0.147	+/ 1.41	0.333	pCi/g					
Radium 226		0.667	+/ 0.109	0.0311	+/ 0.109	0.0663	pCi/g					
Silver 108m	U	0.0119	+/ 0.0163		+/ 0.0163	0.0287	pCi/g					
Thallium 208		0.306	+/ 0.0596	0.0159	+/ 0.0596	0.0339	pCi/g					
Rad Gas Flow Proportio	0											
GFPC, Sr90, solid ALI												
Strontium 90	U	0.0059	+/ 0.0171	0.0202	+/ 0.0171	0.0443	pCi/g		BXF1	06/18/0	06 1101 536483	2
<b>Rad Liquid Scintillation</b>	Analysis											
Liquid Scint Ni63, Solid	ALL FSS											
Nickel 63	U	2.05	+/ 10.4	8.80	+/ 10.4	17.9	pCi/g		SLN1	06/20/0	06 1430 538365	3

The following Prep Methods were performed										
Method	Description	Analyst	Date	Time	Prep Batch					
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097					

# 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 : Address :	Connecticut 362 Injun H		tomic Power						
Contact: Project:	East Hampt Mr. Jack Mo Soils PO# 0	cCarthy	eticut 06424				F	Report Date: June 23, 2	006
	Client San Sample ID			9106 000 16374101			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
3 DOE	RESL Ni 1, I	Modified							
Surrogate/Tracer reco	very Test				Recovery%	Ac	eptable Limi	its	
Carrier/Tracer Recovery	GFP	C, Sr90, sc	olid ALL FSS		75		(25% 125%)		
Carrier/Tracer Recovery	Liqu	id Scint Ni	i63, Solid ALL	FS	52		(25% 125%)		
Notes: The Qualifiers in th * A quality contr < Result is less the	ol analyte rec	covery is c		cified accep	otance criteria	1			
<ul> <li>Result is ress to</li> <li>Result is greated</li> </ul>									
A The TIC is a a		.1							

- The TIC is a suspected aldol condensation product Α
- Target analyte was detected in the associated blank В
- 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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier X
- 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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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power									
Contact:	East Hampto Mr. Jack Mo		ticut 06424			Report Date: June 23, 2006						
Project:	Soils PO# 0	-										
	Client Sam Sample ID Matrix: Collect Da Receive D Collector: Moisture:	): ite:		9106 00 1637410 SE 08 MA 26 MA Client 42.1%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch	Mtd	
Rad Gamma Spec Analy	ysis											
Gamma,Solid FSS GA	M & ALL FSS											
Actinium 228		0.840	+/ 0.226	0.0786	+/ 0.226	0.168	pCi/g	MJH1	06/16/0	06 0622 534130	) 1	
Americium 241	U	0.0195	+/ 0.0317		+/ 0.0317	0.0579	pCi/g					
Bismuth 212		0.758	+/ 0.371	0.162	+/ 0.371	0.345	pCi/g					
Bismuth 214		0.662	+/ 0.138	0.0422	+/ 0.138	0.0889	pCi/g			,		
Cesium 134	U	0.047	+/ 0.0343		+/ 0.0343	0.0577	pCi/g					
Cesium 137 Cobalt 60		0.336 0.246	+/ 0.0689 +/ 0.0501		+/ 0.0689 +/ 0.0501	0.0472 0.0494	pCi/g					
Europium 152	U	0.0238	+/ 0.0301		+/ 0.0301	0.0494	pCi/g pCi/g					
Europium 152	U	0.0258	+/ 0.0024		+/ 0.0024	0.110	pCi/g pCi/g					
Europium 155	Ŭ	0.0474	+/ 0.0837		+/ 0.0837	0.0952	pCi/g					
Lead 212	e	0.887	+/ 0.124	0.0287	+/ 0.124	0.0596	pCi/g					
Lead 214		0.705	+/ 0.116	0.0397	+/ 0.116	0.0828	pCi/g					
Manganese 54	U	0.00134	+/ 0.0286		+/ 0.0286	0.0521	pCi/g					
Niobium 94	U	0.00916	+/ 0.026	0.0207	+/ 0.026	0.0439	pCi/g					
Potassium 40		12.5	+/ 1.26	0.187	+/ 1.26	0.415	pCi/g					
Radium 226		0.662	+/ 0.138	0.0422	+/ 0.138	0.0889	pCi/g					
Silver 108m	U	0.0162	+/ 0.0222		+/ 0.0222	0.0411	pCi/g					
Thallium 208		0.316	+/ 0.0704	0.0195	+/ 0.0704	0.0415	pCi/g					
<b>Rad Gas Flow Proportio</b>	onal Counting	3										
GFPC, Sr90, solid AL	L FSS											
Strontium 90	U	0.00347	+/ 0.0121	0.0128	+/ 0.0121	0.0288	pCi/g	BXF1	06/22/0	06 1046 536483	32	
Dod Linuid Cointillation	Analysis											
<b>Rad Liquid Scintillation</b>												
Liquid Scint Ni63, Solid	-											

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097

#### The following Analytical Methods were performed

1

Method Description EML HASL 300, 4.5.2.3

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## **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact:	East Hampto Mr. Jack Mc	Carthy	ticut 06424				R	eport Date: June 23, 2	006
	Project:	Soils PO# 00	02332							
		Client Sam Sample ID:			9106 000 16374101			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
2	EPA 9	05.0 Modified	i							
3	DOE	RESL Ni 1, M	lodified							
Surrogate/	Fracer recov	ery Test				Recovery%	Ac	ceptable Limi	ts	
Carrier/Trac	er Recovery	GFPC	C, Sr90, so	lid ALL FSS		69		(25% 125%)		
Carrier/Trac	er Recovery	Liqui	d Scint Ni	63, Solid ALL	FS	84		(25% 125%)		
Notes: The Qual	ifiers in this	report are de	efined as	follows :						
< Res	ult is less th	ol analyte reco an value repo r than value r	orted	outside of spec	ified accept	tance criteria	L			

- The TIC is a suspected aldol condensation product Α
- Target analyte was detected in the associated blank В
- 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
- Value is estimated J

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
- Х 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 ^
- Preparation or preservation holding time was exceeded h

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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power								
Contact: Project:	East Hampt Mr. Jack Me Soils PO# 0	cCarthy	ticut 06424				F	Report Date:	June 23, 2	006	
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	); ite:		9106 00 1637410 SE 08 MA 26 MA Client 41.1%	Y 06		Project: Client ID: Vol. Recv.:	YANK01 YANK00			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF An	alyst Date	Time Batch	Mtd
Rad Gamma Spec Analy	sis									<b>a 1 ( a · a</b> /)	
Gamma,Solid FSS GAN	1 & ALL FSS										
Actinium 228		0.834	+/ 0.216	0.0744	+/ 0.216	0.157	pCi/g	М.	H1 06/15/	06 2338 534130	1
Americium 241	U	0.0216	+/ 0.0277		+/ 0.0277	0.0509	pCi/g				
Bismuth 212		0.657	+/ 0.246	0.145	+/ 0.246	0.306	pCi/g				
Bismuth 214		0.640	+/ 0.127	0.0335	+/ 0.127	0.0706	pCi/g				
Cesium 134	U	0.0478	+/ 0.0354		+/ 0.0354	0.0503	pCi/g				
Cesium 137		0.302	+/ 0.0573		+/ 0.0573	0.0448	pCi/g				
Cobalt 60		0.328	+/ 0.0592		+/ 0.0592	0.044	pCi/g				
Europium 152	U	0.0241	+/ 0.0519		+/ 0.0519	0.0952	pCi/g				
Europium 154	U	0.0192	+/ 0.0711		+/ 0.0711	0.124	pCi/g				
Europium 155	U	0.0699	+/ 0.049	0.0436	+/ 0.049	0.0894	pCi/g				
Lead 212		0.826	+/ 0.112	0.0257	+/ 0.112	0.053	pCi/g				
Lead 214		0.705	+/ 0.106	0.0338	+/ 0.106	0.0704	pCi/g				
Manganese 54	U	0.014	+/ 0.0231		+/ 0.0231	0.0394	pCi/g				
Niobium 94	U	0.00643	+/ 0.0227		+/ 0.0227	0.0385	pCi/g				
Potassium 40		12.7	+/ 1.18	0.161	+/ 1.18	0.355	pCi/g				
Radium 226 Silver 108m		0.640 0.000137	+/ 0.127	0.0335	+/ 0.127	0.0706	pCi/g				
Thallium 208	0	0.000137	+/ 0.0191 +/ 0.0533		+/ 0.0191 +/ 0.0533	0.034 0.0406	pCi/g				
Rad Gas Flow Proportion	nal Counting		+/ 0.0333	0.0195	+/ 0.0333	0.0400	pCi/g				
		5									
GFPC, Sr90, solid ALL							~				_
Strontium 90 Rad Liquid Scintillation	U Analysis	0.00859	+/ 0.017	0.0174	+/ 0.017	0.0387	pCi/g	ВΣ	LF1 06/18/	06 1101 536483	2
-	-										
Liquid Scint Ni63, Solid		1.72		= ( =	11 6 60	11 5	-01-		N11 0C/004	06 1604 529265	2
Nickel 63	U	1.63	+/ 6.69	5.65	+/ 6.69	11.5	pCi/g	SL	N1 06/20/	06 1604 538365	3

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097

I he tollowin	g Analytical Methods were	performed
Method	Description	

Michiou	
1	EML HASL 300, 4.5.2.3
2	EPA 905.0 Modified

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## **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power							
_	Contact:	East Hampto Mr. Jack Mc	Carthy	ticut 06424				I	Report D	ate: June 23, 20	006
P	roject:	Soils PO# 00	02332								
		Client Sam Sample ID			9106 00 1637410	008 010FS 012		Project: Client ID: Vol. Recv.:	YANI	K01204 K001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst Date	Time Batch Mte
3	DOE	RESL Ni 1, N	Modified								
Surrogate/Tr	acer recov	ery Test				Recovery%	Ac	ceptable Limi	its		
Carrier/Tracer	Recovery	GFPG	C, Sr90, sc	lid ALL FSS		78		(25% 125%)			
Carrier/Tracer	Recovery	Liqui	id Scint Ni	63, Solid ALL	FS	81		(25% 125%)			
Notes: The Qualifi	iers in this	report are d	efined as	follows :							
< Result	t is less that	analyte rec an value repo	orted	outside of spec	ified acce	eptance criteria	1				

- > Result is greater than value reported
- The TIC is a suspected aldol condensation product Α
- В Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- Analyte has been confirmed by GC/MS analysis С
- Results are reported from a diluted aliquot of the sample D
- Η Analytical holding time was exceeded
- Value is estimated J

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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier Х
- Y QC Samples were not spiked with this compound
- ۸ RPD of sample and duplicate evaluated using +/ RL. Concentrations are <5X the RL

Preparation or preservation holding time was exceeded h

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## **Certificate of Analysis**

	Connecticut 362 Injun Ho		tomic Power									
Contact:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				R	eport Da	ite: Jur	ne 23, 20	006	
	Client Sam Sample ID Matrix: Collect Dat Receive Da Collector: Moisture:	: te:		9106 00 1637410 SE 08 MA <sup>*</sup> 26 MA <sup>*</sup> Client 65.1%	Y 06		Proiect: Client ID: Vol. Recv.:	YANK YANK				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analys	t Date	Time Batch ]	Mtd
Rad Gamma Spec Analys	is											
Gamma, Solid FSS GAM	1 & ALL FSS											
Actinium 228		0.894	+/ 0.285	0.121	+/ 0.285	0.255	pCi/g		MJH1	06/15/0	6 2338 534130	1
Americium 241	U	0.0065	+/ 0.0527		+/ 0.0527	0.088	pCi/g					
Bismuth 212	U	0.385	+/ 0.499	0.263	+/ 0.499	0.551	pCi/g					
Bismuth 214		0.528	+/ 0.139	0.0646	+/ 0.139	0.135	pCi/g					
Cesium 134	UI	0.00	+/ 0.0499		+/ 0.0499	0.091	pCi/g					
Cesium 137	U	0.0676	+/ 0.0621		+/ 0.0621	0.079	pCi/g					
Cobalt 60		0.122	+/ 0.0837		+/ 0.0837	0.0784	pCi/g					
Europium 152	U	0.0509	+/ 0.102	0.0819	+/ 0.102	0.170	pCi/g					
Europium 154	U	0.0134	+/ 0.124	0.103	+/ 0.124	0.218	pCi/g					
Europium 155		0.186	+/ 0.145	0.076	+/ 0.145	0.156	pCi/g					
Lead 212		1.01	+/ 0.0964		+/ 0.0964	0.0896	pCi/g					
Lead 214	<b>.</b>	0.842	+/ 0.147	0.0595	+/ 0.147	0.123	pCi/g					
Manganese 54	U	0.0352	+/ 0.0459		+/ 0.0459	0.0822	pCi/g					
Niobium 94	U	0.0177	+/ 0.0382		+/ 0.0382	0.0647	pCi/g					
Potassium 40		16.3 0.528	+/ 1.25	0.275	+/ 1.25	0.598	pCi/g					
Radium 226 Silver 108m	U	0.528	+/ 0.139	0.0646	+/ 0.139	0.135	pCi/g					
Thallium 208	U	0.0178	+/ 0.0361 +/ 0.0793		+/ 0.0361 +/ 0.0793	0.0592 0.0736	pCi/g					
Rad Gas Flow Proportion	al Counting		+/ 0.0793	0.0555	+/ 0.0/93	0.0730	pCi/g					
GFPC, Sr90, solid ALL		0.0102		0.01.55								
Strontium 90 Rad Liquid Scintillation A	U Analvsis	0.0193	+/ 0.017	0.0153	+/ 0.017	0.0344	pCi/g		BXF1	06/18/0	06 1106 536483	2
Liquid Scint Ni63, Solid	•											
Nickel 63	U U	3.34	+/ 6.23	5.29	+/ 6.23	10.8	pCi/g		SLN1	06/20/0	6 1651 538365	3

Method Description Analyst Date Time Prep Batch
Dry Soil Prep         Dry Soil Prep GL         RAD         A         021         LXM1         05/28/06         1412         534097

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

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## **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun H		tomic Power									
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 0	cCarthy	cticut 06424					R	eport D	ate: June 23, 20	)06	
		Client Sam Sample ID			9106 000 16374101				ect: nt ID: Recv.:	YANI YANI	K01204 K001		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA		Units	DF	Analyst Date	Time	Batch Mtd
3	DOE	RESL Ni 1, N	Modified									-	
Surrogate/	Tracer recov	ery Test				Recovery%	Ac	ceptal	ole Limit	s			
Carrier/Trac	er Recovery	GFP	C, Sr90, sc	lid ALL FSS		77		(25%	125%)				
Carrier/Trac	er Recovery	Liqu	id Scint Ni	i63, Solid ALL	FS	89		(25%	125%)				
* A q	uality contro	s report are d ol analyte rec an value repo	covery is o	follows : outside of spec	vified accep	tance criteria	3						

- > Result is greater than value reported
- The TIC is a suspected aldol condensation product Α
- В 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
- Analytical holding time was exceeded Η
- Value is estimated J

- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- Analyte was analyzed for, but not detected above the MDL, MDA, or LOD. U
- UI Gamma Spectroscopy Uncertain identification
- Х 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
- Preparation or preservation holding time was exceeded h

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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun Ho		tomic Power								
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				R	Report Date:	une 23, 2	006	
	Client Sam Sample ID: Matrix: Collect Dat Receive Da Collector: Moisture:	: te:		9106 00 1637410 SE 08 MA 26 MA Client 61.4%	Y 06		Project: Client ID: Vol. Recv.:	YANK0120 YANK001	14		
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Ana	yst Date	Time Batch	Mtd
Rad Gamma Spec Analy	/sis										
Gamma,Solid FSS GA	M & ALL FSS										
Actinium 228		1.21	+/ 0.250	0.0775	+/ 0.250	0.165	pCi/g	МЈН	1 06/15/	06 2354 534130	/ 1
Americium 241	U	0.0448	+/ 0.116	0.0842	+/ 0.116	0.173	pCi/g				
Bismuth 212		0.622	+/ 0.272	0.166	+/ 0.272	0.352	pCi/g				
Bismuth 214		0.871	+/ 0.154	0.0439	+/ 0.154	0.0922	pCi/g				
Cesium 134	UI	0.00	+/ 0.0417		+/ 0.0417	0.0593	pCi/g				
Cesium 137	U	0.0103	+/ 0.0281		+/ 0.0281	0.0489	pCi/g				
Cobalt 60	U	0.0299	+/ 0.0305		+/ 0.0305	0.0573	pCi/g				
Europium 152	U	0.0772	+/ 0.0721		+/ 0.0721	0.116	pCi/g				
Europium 154	U	0.0345	+/ 0.0915		+/ 0.0915	0.163	pCi/g				
Europium 155	U	0.0901	+/ 0.087	0.0707	+/ 0.087	0.146	pCi/g				
Lead 212		1.15	+/ 0.129	0.0377	+/ 0.129	0.0779	pCi/g				
Lead 214		1.00	+/ 0.172	0.041	+/ 0.172	0.0856	pCi/g				
Manganese 54	U	0.0151	+/ 0.0301		+/ 0.0301	0.0541	pCi/g				
Niobium 94	U	0.0107	+/ 0.0253		+/ 0.0253	0.0454	pCi/g				
Potassium 40		19.2	+/ 1.60	0.185	+/ 1.60	0.408	pCi/g				
Radium 226		0.871	+/ 0.154	0.0439	+/ 0.154	0.0922	pCi/g				
Silver 108m	U	0.0111 0.313	+/ 0.0239		+/ 0.0239	0.0416	pCi/g				
Thallium 208	nal Counting		+/ 0.0665	0.0232	+/ 0.0665	0.0487	pCi/g				
Rad Gas Flow Proportio											
GFPC, Sr90, solid AL											
Strontium 90	U	0.0098	+/ 0.0158	0.0157	+/ 0.0158	0.0353	pCi/g	BXF	1 06/18/	06 1106 536483	2
<b>Rad Liquid Scintillation</b>	Analysis										
Liquid Scint Ni63, Solia	I ALL FSS										
Nickel 63	U	2.7	+/ 5.98	5.07	+/ 5.98	10.3	pCi/g	SLN	1 06/20/	06 1738 538365	53

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097
The following A	Analytical Methods were performed				
	Analytical Methods were performed Description				· · · ·
The following A Method	• • • • • • • • • • • • • • • • • • •				

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## **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	cticut 06424				F	Report Date: June 23, 20	006
		Client Sam Sample ID			9106 0008 163741014			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Paramet	er	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
3	DOE	RESL Ni 1, N	Aodified							
Surroga	te/Tracer recov	ery Test			F	Recovery%	A	cceptable Limi	its	
Carrier/T	racer Recovery	GFP	C, Sr90, sc	lid ALL FSS		77		(25% 125%)		
Carrier/T	racer Recovery	Liqui	id Scint Ni	i63, Solid ALL	FS	83		(25% 125%)		
Notes: The Q	ualifiers in this	report are d	efined as	follows :						
< R	A quality contro Result is less the Result is greater	an value repo	orted	outside of spec	ified accepta	ance criteria	l			
A T B T	The TIC is a su Farget analyte v Results are eit	spected aldo was detected	l conden in the ass	sociated blank						

- С Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- Η 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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier Х
- 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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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power								
Contact:	East Hampt Mr. Jack M		ticut 06424				R	eport Date: Jui	ne 23, 20	006	
Project:	Soils PO# 0	02332									
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	); ate:		9106 00 1637410 SE 08 MA 26 MA Client 54.1%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch	Mtd
Rad Gamma Spec Anal	ysis										
Gamma, Solid FSS GA	M & ALL FSS	5									
Actinium 228		0.829	+/ 0.225	0.0682	+/ 0.225	0.147	pCi/g	MJH1	06/15/0	6 2346 534130	+ 1
Americium 241	U	0.00581	+/ 0.113	0.089	+/ 0.113	0.184	pCi/g				
Bismuth 212		0.447	+/ 0.261	0.161	+/ 0.261	0.342	pCi/g				
Bismuth 214		0.758	+/ 0.126	0.0375	+/ 0.126	0.0792	pCi/g				
Cesium 134	U	0.0414	+/ 0.0279		+/ 0.0279	0.0533	pCi/g				
Cesium 137	U	0.00389	+/ 0.0232		+/ 0.0232	0.0402	pCi/g				
Cobalt 60	U	0.0145	+/ 0.0239		+/ 0.0239	0.0404	pCi/g				
Europium 152	U	0.00738	+/ 0.0586		+/ 0.0586	0.0995	pCi/g				
Europium 154	U	0.0016	+/ 0.076	0.0629	+/ 0.076	0.137	pCi/g				
Europium 155	U	0.0316	+/ 0.0628		+/ 0.0628	0.113	pCi/g				
Lead 212		1.01	+/ 0.109	0.0282	+/ 0.109	0.0587	pCi/g				
Lead 214		0.746	+/ 0.119	0.0365	+/ 0.119	0.0763	pCi/g				
Manganese 54	U	0.00361	+/ 0.027	0.0217	+/ 0.027	0.0461	pCi/g				
Niobium 94	U	0.00521	+/ 0.0228		+/ 0.0228	0.0391	pCi/g				
Potassium 40		14.7	+/ 1.47	0.205	+/ 1.47	0.450	pCi/g				
Radium 226	11	0.758	+/ 0.126	0.0375	+/ 0.126	0.0792	pCi/g				
Silver 108m Thallium 208	U	0.000405 0.326	+/ 0.0194 +/ 0.0564		+/ 0.0194 +/ 0.0564	0.0348	pCi/g				
Rad Gas Flow Proportion	anal Countin		+/ 0.0504	0.0209	+/ 0.0504	0.0441	pCi/g				
-		B									
GFPC, Sr90, solid AL											_
Strontium 90	U	0.0054	+/ 0.0153	0.0161	+/ 0.0153	0.0357	pCi/g	BXF1	06/18/0	06 1106 536483	2
Rad Liquid Scintillation	n Analysis										
Liquid Scint Ni63, Solid	d ALL FSS										
Nickel 63	U	1.72	+/ 7.06	5.96	+/ 7.06	12.1	pCi/g	SLN1	06/20/0	6 1825 538365	2

The following	Prep Methods were performed				
Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097
The following <b>A</b>	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 : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				R	eport Date: June 23, 20	006
		Client Sam Sample ID			9106 00 1637410	08 014F 15		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
3	DOE	RESL Ni 1, N	lodified							
Surrogate/	Fracer recov	ery Test				Recovery%	Acc	eptable Limi	ts	
Carrier/Trace	er Recovery	GFPG	C, Sr90, sc	lid ALL FSS		82	(	(25% 125%)		
Carrier/Trace	er Recovery	Liqui	d Scint Ni	63, Solid ALL F	S	79	(	(25% 125%)		
* A qu < Rest > Rest A The B Tary BD Res C Ana D Res	uality contro ult is less the ult is greater TIC is a su get analyte v sults are eit alyte has bee ults are repo	an value report than value report spected aldo was detected her below the m confirmed	overy is o orted eported conden in the ass e MDC of by GC/M diluted al	outside of specif sation product ociated blank r tracer recovery IS analysis iquot of the sam	v is low	ptance criteria				
J Valu	ie is estimate	ed			tration a	rooda anika a	anaantrat	ion hy AV or		
	ple results		л арріу.	Sample concent	uation ex	ceeus spike c	concentrat	ion by 4X of	more	

- 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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## **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	ticut 06424				R	eport Date: Jur	ie 23, 200	6		
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	): ite:		9106 00 1637410 SE 08 MA 26 MA Client 26.1%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Ba	atch N	1td
Rad Alpha Spec Analysi	S							······································				
Alphaspec Am241, Cm,	Solid ALL FS	S										
Americium 241	U	0.0299	+/ 0.151	0.144	+/ 0.151	0.392	pCi/g	JXG1	06/16/06	0803 53	7411	1
Curium 242	U	0.0126	+/ 0.0957		+/ 0.0957	0.300	pCi/g					
Curium 243/244	U	0.0383	+/ 0.218	0.218	+/ 0.218	0.540	pCi/g					
Alphaspec Pu, Solid A												
Plutonium 238	U	0.00	+/ 0.0633		+/ 0.0633	0.0875	pCi/g	JXG1	06/16/06	0928 53	7412	2
Plutonium 239/240	U	0.0335	+/ 0.0944	0.0735	+/ 0.0945	0.234	pCi/g					
Liquid Scint Pu241, Sol	id ALL FSS											
Plutonium 241	U	0.179	+/ 10.9	9.12	+/ 10.9	18.8	pCi/g	JXG1	06/20/06	1931 53	57417	3
Rad Gamma Spec Analy	/sis											
Gamma, Solid FSS GA	M & ALL FSS	5										
Actinium 228		0.685	+/ 0.143	0.0394	+/ 0.143	0.0829	pCi/g	МЈН1	06/16/06	0623 53	4130	4
Americium 241	U	0.000535	+/ 0.0924		+/ 0.0924	0.159	pCi/g					
Bismuth 212		0.589	+/ 0.310	0.087	+/ 0.310	0.182	pCi/g					
Bismuth 214		0.445	+/ 0.0688		+/ 0.0688	0.0477	pCi/g					
Cesium 134 Cesium 137	UI	0.00 0.184	+/ 0.0301 +/ 0.0341		+/ 0.0301 +/ 0.0341	0.0313 0.0226	pCi/g pCi/g					
Cobalt 60		0.184	+/ 0.0378		+/ 0.0341	0.0220	pCi/g pCi/g					
Europium 152	U	0.0299	+/ 0.0402		+/ 0.0378	0.0637	pCi/g					
Europium 152	Ŭ	0.0105	+/ 0.0393		+/ 0.0393	0.0718	pCi/g					
Europium 155	Ū	0.00	+/ 0.0573		+/ 0.0573	0.0653	pCi/g					
Lead 212		0.723	+/ 0.0792	0.0193	+/ 0.0792	0.0396	pCi/g					
Lead 214		0.586	+/ 0.0847	0.0213	+/ 0.0847	0.0441	pCi/g					
Manganese 54	U	0.003	+/ 0.0149		+/ 0.0149	0.0261	pCi/g					
Niobium 94	U	0.00892	+/ 0.0123		+/ 0.0123	0.0223	pCi/g					
Potassium 40		11.7	+/ 0.969	0.0946	+/ 0.969	0.205	pCi/g					
Radium 226		0.445	+/ 0.0688		+/ 0.0688	0.0477	pCi/g					
Silver 108m Thallium 208	U	0.00372 0.221	+/ 0.0119 +/ 0.0359		+/ 0.0119 +/ 0.0359	0.0213 0.0223	pCi/g pCi/g					
Rad Gas Flow Proportio	nal Countin		+/ 0.0339	0.0107	+7 0.0339	0.0225	pc1/g					
-	-	5										
GFPC, Sr90, solid ALI Strontium 90		0.0102	±/ 0.0141	0.0102	+/ 0.0141	0.0419	nCi/a	DVFI	06/19/04	51100 41	16102	5
Rad Liquid Scintiliation	U Analysis	0.0192	+/ 0.0141	0.0192	+/ 0.0141	0.0418	pCi/g	DALI	06/18/06	1109 33	70403	5
-	-	ECC										
LSC, Tritium Dist, Solid Tritium	U	FSS 0.839	+/ 6.11	5.08	+/ 6.11	10.7	pCi/g	NXP1	06/17/06	5 1626 53	35984	6
Liquid Scint C14, Solid	All,FSS											

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## **<u>Certificate of Analysis</u>**

Address :									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 00	Carthy	ticut 06424				न	Report Date: June 23, 20	006
	Client Sam Sample ID	nple ID: :		9106 00 1637410	008 012F 016		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
Rad Liquid Scintillati	on Analysis								
Liquid Scint C14, Sol	id All,FSS								
Carbon 14	U	0.165	+/ 0.117	0.095	+/ 0.117	0.193	pCi/g	ATH2 06/05/	06 2139 534837 7
Liquid Scint Fe55, Sc	olid ALL FSS								
Iron 55	U	3.6	+/ 17.5	13.4	+/ 17.5	28.2	pCi/g	SLN1 06/21/	06 0829 538969 8
Liquid Scint Ni63, So	lid ALL FSS								
Nickel 63	U	2.17	+/ 8.55	7.22	+/ 8.55	14.7	pCi/g	SLN1 06/20/	06 1912 538365 9
Liquid Scint Tc99, So	lid ALL FSS								
Technetium 99	U	0.0182	+/ 0.216	0.182	+/ 0.216	0.375	pCi/g	SXE1 06/14/	06 1730 536314 10

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM1	05/28/06	1412	534097

#### 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 EML HASL 300, Tc 02 RC Modified

Company : Connecticut Yankee Atomic Power

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	76	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	89	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	52	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	85	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	91	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	63	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	83	(15% 125%)	

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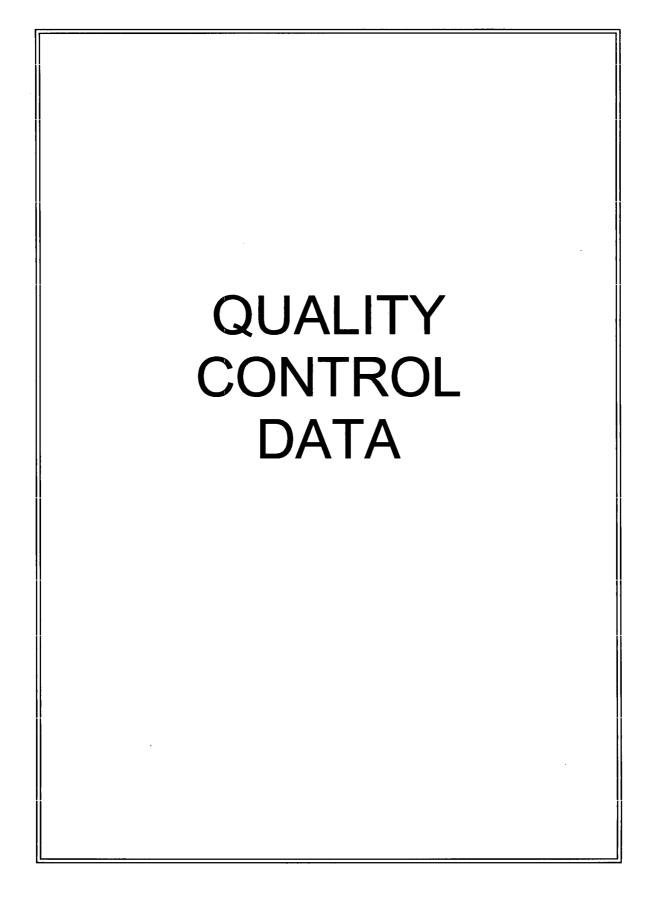
## **Certificate of Analysis**

Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
_		Client Sam Sample ID			9106 000 16374101			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Pro	ject:	Soils PO# 00	02332							
Con	ntact:	East Hampto Mr. Jack Mc	· ·	cticut 06424				I	Report Date: June 23, 20	006
	npany : dress :	Connecticut 362 Injun Ho		tomic Power						

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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Client :	Connecticut Yankee & 362 Injun Hollow Rd	Atomic Power	<u>QC</u>	Su Su	<u>mmary</u>			Report D	ate: June 23, 2006 Page 1 of 9	
Contact:	East Hampton, Conne Mr. Jack McCarthy	ecticut								
Workorder:	163741									
Parmname		NOM	Sample (	Dual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Alpha Spec	537411		<b>_</b>	•						
QC120111020 Americium-241	08 163741008 DUP		0.0496	T	0.0424	-Cile	. 16		(09/ 1009/) IVC1	06/16/06 09.01
Americium-241		U		U	0.0424	pCi/g	g 16		(0% - 100%) JXG1	06/16/06 08:03
		Uncert:	+/-0.0968		+/-0.116					
Curium-242		TPU:	+/-0.097 0.00	U	+/-0.116 -0.0313	-Cile	200		(0% - 100%)	
Curium-242		U	+/-0.0738	U	+/-0.0354	pCi/g	<u>,</u> 200		(0% - 100%)	
		Uncert:			+/-0.0354					
Curium-243/244	4	TPU:	+/-0.0738 0.00883	U	-0.0933	-C:/a	242		(0% - 100%)	
Cumum-243/24-	+	U Uncert:	+/-0.0669	U	+/-0.126	pCi/g	, 242		(076 - 10076)	
		TPU:	+/-0.0669		+/-0.126					
QC12011102	10 LCS	IPU:	-7-0.0009		-7-0.120					
Americium-241		13.0			12.7	pCi/g	r	98	(75%-125%)	
		Uncert:			+/-1.35	P0.5	,		(10/0120/0)	
		TPU:			+/-2.20					
Curium-242		110.		U	0.0293	pCi/g	r			
		Uncert:		-	+/-0.0778	P c	,			
		TPU:			+/-0.0779					
Curium-243/244	4	15.9			15.4	pCi/g	ŗ	97	(75%-125%)	
		Uncert:			+/-1.50	P 2	,		()	
		TPU:			+/-2.59					
QC120111020	07 MB	110.								
Americium-241				U	-0.0328	pCi/g	,			
		Uncert:			+/-0.0912					
		TPU:			+/-0.0914					
Curium-242				U	-0.0112	pCi/g	ç			
		Uncert:			+/-0.022					
		TPU:			+/-0.022					
Curium-243/244	4			U	-0.129	pCi/g	ç			
		Uncert:			+/-0.123					
		TPU:			+/-0.124					
QC120111020	09 163741008 MS									
Americium-241		13.6 U	0.0496		13.4	pCi/g	Ş	99	(75%-125%)	
		Uncert:	+/-0.0968		+/-1.46					
		TPU:	+/-0.097		+/-2.36					
Curium-242		U	0.00	U	0.0255	pCi/g	ç			
		Uncert:	+/-0.0738		+/-0.102					
o :		TPU:	+/-0.0738		+/-0.102					
Curium-243/244	7	16.7 U	0.00883		16.3	pCi/g	5	98	(75%-125%)	
		Uncert:	+/-0.0669		+/-1.62					
Patab	527412	TPU:	+/-0.0669		+/-2.79					
Batch	537412									
	16 163741008 DUP									
Plutonium-238		U	0.00	U	0.00	pCi/g	g 0		(0% - 100%) JXG1	06/16/06 09:28

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		<u>v</u>	Ju	mmary							
Workorder: 163741								Page 2	of 9		
Parmname	NOM	Sample (	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Tim
Rad Alpha Spec Batch 537412											
Batch 557412											
	Uncert:	+/-0.110		+/-0.0615							
	TPU:	+/-0.110		+/-0.0615							
Plutonium-239/240	U	-0.226	U	0.0326	pCi/	g 267		(0% - 100%)	)		
	Uncert:	+/-0.163		+/-0.0917							
	TPU:	+/-0.165		+/-0.0918							
QC1201110218 LCS											
Plutonium-238			U	0.0301	pCi/	g		(75%-125%)	)		
	Uncert:			+/-0.0797							
	TPU:			+/-0.0798							
Plutonium-239/240	12.0			10.9	pCi/	g	91	(75%-125%)	)		
	Uncert:			+/-1.29							
	TPU:			+/-1.77							
QC1201110215 MB Plutonium-238			11	0.0798		_					
Flutomum-238	Uncert:		U		pCi/	5					
				+/-0.0991							
Plutonium-239/240	TPU:		TI	+/-0.0995 0.044	-0:/	~					
Flutomum-239/240	Uncert:		U	+/-0.0824	pCi/	g					
QC1201110217 163741008 MS	TPU:			+/-0.0826							
Plutonium-238	TT	0.00	U	0.00901	pCi/	n .		(75%-125%)	`		
Tutomum-236	U Uncert:	+/-0.110	U	+/-0.0856	pen	5		(7570-12570	,		
	TPU:	+/-0.110		+/-0.0856							
Plutonium-239/240	12.6 U	-0.226		10.7	pCi/j	'n	85	(75%-125%)	`		
	Uncert:	+/-0.163		+/-1.08	pen	5	05	(15/0-125/0	,		
	TPU:	+/-0.165		+/-1.51							
Batch 537417	110.	., 0.105		17 1.51							
001001110000 1/00/1000 DUD											
QC1201110230 163741008 DUP Plutonium-241		4.08	11	4.2	-C:/	- 0		(00/ 1000/	IVCI	06/20/0	c 20.2
Flutomum-241	U Uncert:	4.08 +/-6.18	U	-4.3 +/-8.53	pCi/	g 0		(0% - 100%	) JAGI	06/20/0	0 20:3
		+/-6.18									
QC1201110232 LCS	TPU:	+/-0.19		+/-8.54							
Plutonium-241	140			144	pCi/	τ	102	(75%-125%	`	06/20/0	6 21.3
	Uncert:			+/-10.8	peu	5	102	(1570-12570	,	00/20/0	0 21.5
	TPU:			+/-17.7							
QC1201110229 MB	110.			()-1)./							
Plutonium-241			U	-2.16	pCi/j	p				06/20/0	6 20:0
	Uncert:			+/-6.46	Peri	5					
	TPU:			+/-6.47							
QC1201110231 163741008 MS											
Plutonium-241	142 U	4.08		129	pCi/	g	91	(75%-125%	)	06/20/0	6 21:0
	Uncert:	+/-6.18		+/-9.07	-						
	TPU:	+/-6.19		+/-14.8							
Rad Gamma Spec											
Batch 534130											
QC1201102650 163741001 DUP											
Actinium-228		0.817		0.702	pCi/	g 15		(0% - 100%	) MJH1	06/16/0	6 06:3
	Uncert:	+/-0.177		+/-0.147							
				+/-0.147							

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		$\underline{\mathbf{v}}$	Su	mmai y								
Workorder: 163741							Page 3 o	of 9				
Parmname	NOM	Sample Q	)uai	QC	Units R	PD%	REC% Range	Anlst	Date Time			
Rad Gamma SpecBatch534130												
	TPU:	+/-0.177										
Americium-241	U	0.0431	U	0.0617	pCi/g	36	(0% - 100%)					
	Uncert:	+/-0.0977		+/-0.0702								
	TPU:	+/-0.0977		+/-0.0702								
Bismuth-212		0.570		0.607	pCi/g	6	(0% - 100%)					
	Uncert:	+/-0.292		+/-0.297								
	TPU:	+/-0.292		+/-0.297								
Bismuth-214		0.568		0.650	pCi/g	14	(0% - 100%)					
	Uncert:	+/-0.0877		+/-0.103								
	TPU:	+/-0.0877		+/-0.103								
Cesium-134	U	0.0314	UI	0.0349	pCi/g	11	(0% - 100%)					
	Uncert:	+/-0.0354		+/-0.0245								
	TPU:	+/-0.0354		+/-0.0245								
Cesium-137		0.396		0.363	pCi/g	9	(0% - 100%)					
	Uncert:	+/-0.0588		+/-0.0539								
	TPU:	+/-0.0588		+/-0.0539								
Cobalt-60		0.133		0.105	pCi/g	24	(0% - 100%)					
	Uncert:	+/-0.0554		+/-0.0405								
	TPU:	+/-0.0554		+/-0.0405								
Europium-152	U	0.00717	U	-0.0343	pCi/g	306	(0% - 100%)					
-	Uncert:	+/-0.0581		+/-0.061			· · · · ·					
	TPU:	+/-0.0581		+/-0.061								
Europium-154	U	0.040	U	-0.0163	pCi/g	475	(0% - 100%)					
*	Uncert:	+/-0.0643		+/-0.0693	1 0		· · · ·					
	TPU:	+/-0.0643		+/-0.0693								
Europium-155	U	0.0854	U	0.0232	pCi/g	115	(0% - 100%)					
1	Uncert:	+/-0.0769		+/-0.0784	F 8		()					
	TPU:	+/-0.0769		+/-0.0784								
Lead-212		0.772		0.808	pCi/g	5	(0% - 20%)					
	Uncert:	+/-0.0707		+/-0.0864	F 8		()					
	TPU:	+/-0.0707		+/-0.0864								
Lead-214	11 01	0.585		0.742	pCi/g	24	(0% - 20%)					
	Uncert:	+/-0.0841		+/-0.099	1 0							
	TPU:	+/-0.0841		+/-0.099								
Manganese-54	U	0.0123	U	0.0098	pCi/g	22	(0% - 100%)					
<b>G</b>	Uncert:	+/-0.0261	-	+/-0.022	F8		(*** -****)					
	TPU:	+/-0.0261		+/-0.022								
Niobium-94	U U	-0.000522	U	0.00495	pCi/g	247	(0% - 100%)					
	Uncert:	+/-0.0212	•	+/-0.0175	P018		(0/0 100/0)					
	TPU:	+/-0.0212		+/-0.0175								
Potassium-40	110.	12.1		12.1	pCi/g	0	(0% - 20%)					
	Uncert:	+/-0.950		+/-1.08	peng	Ū	(0/0 20/0)					
	TPU:	+/-0.950		+/-1.08								
Radium-226	Iru.	0.568		0.650	pCi/g	14	(0% - 100%)					
	Uncert:	+/-0.0877		+/-0.103	PCnB	17	(070 - 10070)					
	TPU:	+/-0.0877		+/-0.103								
Silver-108m	U	0.00495	U	0.0141	pCi/g	96	(0% - 100%)					
	Uncert:	+/-0.0195	5	+/-0.018	PCng		(370 - 10070)					
	Oncent.	1/-0.0195		-7-0.010								

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## **QC** Summary

		<u>VC Su</u>	mmary								
Workorder: 163741					Page 4 of 9						
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time	
Rad Gamma Spec Batch 534130											
	TPU:	+/-0.0195	+/-0.018								
Thallium-208		0.300	0.295	pCi/g	g 2		(0% - 100%)	•			
	Uncert:	+/-0.0497	+/-0.0475								
	TPU:	+/-0.0497	+/-0.0475								
QC1201102651 LCS											
Actinium-228		U	0.235	pCi/g	3				06/16/0	6 06:31	
	Uncert:		+/-0.581								
	TPU:		+/-0.581								
Americium-241	23.4		23.0	pCi/g	3	98	(75%-125%)	)			
	Uncert:		+/-2.46								
	TPU:		+/-2.46								
Bismuth-212		U	0.778	pCi/g	3						
	Uncert:		+/-1.12								
	TPU:		+/-1.12								
Bismuth-214		U	-0.171	pCi/g	3						
	Uncert:	,	+/-0.298								
	TPU:	·	+/-0.298								
Cesium-134		U	0.0723	pCi/g	3						
	Uncert:		+/-0.160								
	TPU:		+/-0.160								
Cesium-137	9.63		10.5	pCi/g	3	109	(75%-125%)	)			
	Uncert:		+/-0.824								
	TPU:		+/-0.824								
Cobalt-60	15.0		15.1	pCi/g	3	101	(75%-125%)	)			
	Uncert:		+/-1.08								
	TPU:		+/-1.08								
Europium-152		U	0.042	pCi/g	3						
	Uncert:		+/-0.334								
	TPU:		+/-0.334								
Europium-154		U	0.289	pCi/g	3						
	Uncert:		+/-0.325								
	TPU:		+/-0.325								
Europium-155		U	-0.257	pCi/g	3						
	Uncert:		+/-0.387								
	TPU:		+/-0.387								
Lead-212		U	-0.101	pCi/g	3						
	Uncert:		+/-0.189								
	TPU:		+/-0.189								
Lead-214		U	0.233	pCi/g	g						
	Uncert:		+/-0.248								
	TPU:		+/-0.248								
Manganese-54		U	0.0621	pCi/g	g						
	Uncert:		+/-0.149								
	TPU:		+/-0.149								
Niobium-94		U	-0.0598	pCi/g	g						
	Uncert:		+/-0.129								
	TPU:		+/-0.129								
Potassium-40		U	0.576	pCi/g	g						

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		<u>yc su</u>	mmary								
Workorder: 163741					Page 5 of 9						
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time	
Rad Gamma Spec Batch 534130											
Batch 534130											
	Uncert:		+/-1.23								
	TPU:		+/-1.23								
Radium-226		U	-0.171	pCi/	g	(	75%-125%	)			
	Uncert:		+/-0.298								
	TPU:		+/-0.298								
Silver-108m		U	-0.0434	pCi/	g						
	Uncert:		+/-0.123								
	TPU:		+/-0.123	~							
Thallium-208		U	0.144	pCi/	g						
	Uncert:		+/-0.146								
	TPU:		+/-0.146								
QC1201102649 MB Actinium-228		U	0.0712	-C:/	~				06/16/0	6 06.22	
Actimum-228	Uncert:	0		pCi/	g				00/10/0	0 00.22	
			+/-0.0472 +/-0.0472								
Americium-241	TPU:	U	0.00139	pCi/	a						
Americium-241	Uncert:	U	+/-0.0249	pc1/	g						
	TPU:		+/-0.0249								
Bismuth-212	IFU:	U	0.0152	pCi/	a						
Districti-212	Uncert:	0	+/-0.166	per	Б						
	TPU:		+/-0.166								
Bismuth-214	110.	U	0.0175	pCi/	σ						
Disinali 211	Uncert:	Ũ	+/-0.0261	per	6						
	TPU:		+/-0.0261								
Cesium-134	110.	U	0.00016	pCi/	σ						
	Uncert:		+/-0.0151	P	0						
	TPU:		+/-0.0151								
Cesium-137		U	-0.00376	pCi/	'g						
	Uncert:	-	+/-0.0123	<b>r</b>	8						
	TPU:		+/-0.0123								
Cobalt-60		U	0.00528	pCi/	'g						
	Uncert:		+/-0.0137	•	•						
	TPU:		+/-0.0137								
Europium-152		U	-0.0157	pCi/	g						
-	Uncert:		+/-0.0336	_	-						
	TPU:		+/-0.0336								
Europium-154		U	-0.0124	pCi/	'g						
	Uncert:		+/-0.0325								
	TPU:		+/-0.0325								
Europium-155		U	0.00213	pCi/	'g						
	Uncert:		+/-0.031								
	TPU:		+/-0.031								
Lead-212		U	0.000337	pCi/	′g						
	Uncert:		+/-0.0331							,	
	TPU:		+/-0.0331								
Lead-214		U	0.0225	pCi/	g						
	Uncert:		+/-0.0398								
	TPU:		+/-0.0398								

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		<u>VC 50</u>	mmary							
Workorder: 163741							Page 6	of 9		
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma SpecBatch534130										
Manganese-54		U	-0.00637	pCi/j	g					
-	Uncert:		+/-0.0124	-						
	TPU:		+/-0.0124							
Niobium-94		U	-0.00531	pCi/	g					
	Uncert:		+/-0.0115							
	TPU:		+/-0.0115							
Potassium-40		UI	0.00	pCi/	g					
	Uncert:		+/-0.267							
	TPU:		+/-0.267	<i></i>						
Radium-226		U	0.0175	pCi/	g					
	Uncert:		+/-0.0261							
<b>C</b> '1 100	TPU:	* *	+/-0.0261	0.1						
Silver-108m		U	-0.00282	pCi/	g					
	Uncert:		+/-0.0119							
TI 11: 000	TPU:	* 1	+/-0.0119		_					
Thallium-208	The sector	U	0.000804	pCi/	g					
	Uncert:		+/-0.0171							
Rad Gas Flow Batch 536483	TPU:		+/-0.0171							
OC1201108057 162741001 DIM										
QC1201108057 163741001 DUP Strontium-90	U	0.00579 U	0.0106	pCi/	g 0		(0% - 100%)	BXFI	06/18/06	5 1 1 • 00
Stontum-90	Uncert:	+/-0.0116	+/-0.0165	PC <sup>1</sup>	6 0		(0/0 - 100/0)	DATI	00/10/00	, 11.0,
	TPU:	+/-0.0116	+/-0.0165							
QC1201108059 LCS	110.	., 0.0110								
Strontium-90	1.43		1.41	pCi/	g	99	(75%-125%)	•	06/18/06	5 10:06
	Uncert:		+/-0.100	-	•		,			
	TPU:		+/-0.109							
QC1201108056 MB										
Strontium-90		U	-0.0118	pCi/	g				06/18/06	5 11:09
	Uncert:		+/-0.0102							
	TPU:		+/-0.0102							
QC1201108058 163741001 MS				~					0.6.11.0.10.1	
Strontium-90	1.44 U	0.00579	1.23	pCi/	g	86	(75%-125%)	)	06/18/06	5 11:09
	Uncert:	+/-0.0116	+/-0.0952							
	TPU:	+/-0.0116	+/-0.102							
Rad Liquid ScintillationBatch534837										
QC1201104385 162335019 DUP										
Carbon-14	U	0.0228 U	0.0418	pCi/	g 0		(0% - 100%)	ATH2	06/05/06	5 22:40
	Uncert:	+/-0.110	+/-0.121							
	TPU:	+/-0.110	+/-0.121							
QC1201104387 LCS				_			·			
Carbon-14	6.66		6.52	pCi/	g	98	(75%-125%)	)	06/04/00	5 08:22
	Uncert:		+/-0.238							
	TPU:		+/-0.259							
QC1201104384 MB		* *	0.0271	-01	~				06/04/04	C 06-0
Carbon-14		U	0.0371	pCi/	g				06/04/00	0 00:04

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Workorder: 163741				<b>.</b>			7 of 9	of 9			
Parmname	NOM	Sample (	Qual	QC	Units	RPD%	REC%		Anlst	Date	Time
Rad Liquid Scintillation											
Batch 534837											
	Uncert:			+/-0.125							
	TPU:			+/-0.125							
QC1201104386 162335019 MS Carbon-14	7.13 U	0.0228		7.04	pCi/	a	00	(75%-125%)	`	06/04/06	07.3
Carbon-14	7.13 U Uncert:	+/-0.110		+/-0.249	pen	5	"	(7370-12370	,	00/04/00	07.5
	TPU:	+/-0.110		+/-0.272							
Batch 535984	110.	., 0.110		., 0.272					•		
QC1201106886 163626016 DUP											
Tritium	U	0.738	U	-1.57	pCi/	g 0		(0% - 100%	) NXP1	06/17/06	17:3
	Uncert:	+/-6.97		+/-7.27							
	TPU:	+/-6.97		+/-7.27							
QC1201106888 LCS Tritium	52.7			55.2	pCi/j	•	105	(75%-125%	<b>`</b>	06/17/06	18.0
Indum	Uncert:			+/-9.22	per:	g	105	(7570-12570	,	00/17/00	10.0
	TPU:			+/-9.27							
QC1201106885 MB	IFU.			(1-).21							
Tritium			U	-0.845	pCi/j	g				06/17/06	17:1
	Uncert:			+/-5.81							
	TPU:			+/-5.81							
QC1201106887 163626016 MS					~ ~ ~						
Tritium	53.0 U	0.738		44.6	pCi/	g	84	(75%-125%	)	06/17/06	17:4
	Uncert:	+/-6.97 +/-6.97		+/-8.62 +/-8.66							
Batch 536314	TPU:	-7/-0.97		⊤/-0.00							
QC1201107611 163741008 DUP Technetium-99	U	0.196	U	0.273	pCi/	g 0		(0% - 100%	) SXE1	06/14/06	18.3
	Uncert:	+/-0.227	U	+/-0.233	per	5		(0/0 100/0	, 0/101	00/11/00	10.5
	TPU:	+/-0.227		+/-0.233							
QC1201107613 LCS											
Technetium-99	13.1			11.5	pCi/	g	87	(75%-125%	)	06/14/06	19:1
	Uncert:			+/-0.471							
	TPU:			+/-0.540							
QC1201107610 MB Technetium-99				0.000	-0:/	~				06/14/06	10.7
Technenum-99	Uncert:		U	0.090 +/-0.200	pCi/	g				00/14/00	10.2
	TPU:			+/-0.200							
QC1201107612 163741008 MS	110.			17-0.200							
Technetium-99	12.7 U	0.196		11.2	pCi/	g	88	(75%-125%	)	06/14/06	18:5
	Uncert:	+/-0.227		+/-0.494							
	TPU:	+/-0.227		+/-0.557							
Batch 538365											
QC1201112556 163741003 DUP											
Nickel-63	U	-1.8	U	-2.43	pCi/	g 0		(0% - 100%	) SLNI	06/20/06	20:4
	Uncert:	+/-4.81		+/-6.00							
001001110550 1 55	TPU:	+/-4.81		+/-6.00							
QC1201112558 LCS Nickel-63	356			287	pCi/	α	<b>£</b> 1	(75%-125%	<b>`</b>	06/20/06	21.5
	Uncert:			+/-13.5	pc1/	5	01	(1370-12370	,	00/20/00	21.3
	TPU:			+/-15.5							
	IPU;			1-13.3							

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### **QC** Summary

Workorder: 163741								Page 8 o	f 9		
Parmname	NOM	Sample (	Qual	QC	Units	RPD%	REC%	Range A	Anlst	Date	Time
Rad Liquid Scintillation											
Batch 538365											
QC1201112555 MB											
Nickel-63			U	-1.14	pCi/j	g				06/20/0	6 20:00
	Uncert:			+/-3.95							
	TPU:			+/-3.95							
QC1201112557 163741003 MS											
Nickel-63	413 U	-1.8		347	pCi/j	g	84	(75%-125%)		06/20/0	6 21:33
	Uncert:	+/-4.81		+/-16.5							
	TPU:	+/-4.81		+/-19.3							
Batch 538969											
QC1201113888 163741008 DUP											
Iron-55	U	21.1	U	-1.03	pCi/j	g 0		(0% - 100%)	SLNI	06/21/0	6 10:23
	Uncert:	+/-18.3		+/-16.3	• •	0					
	TPU:	+/-18.5		+/-16.3							
QC1201113890 LCS											
Iron-55	575			529	pCi/j	g	92	(75%-125%)		06/21/0	6 10:40
	Uncert:			+/-44.0		-		. ,			
	TPU:			+/-86.2							
QC1201113887 MB											
Iron-55			U	5.38	pCi/j	g				06/21/0	6 09:5
	Uncert:			+/-26.8							
	TPU:			+/-26.8							
QC1201113889 163741008 MS											
Iron-55	594 U	21.1		546	pCi/	g	92	(75%-125%)		06/21/0	6 10:02
	Uncert:	+/-18.3		+/-33.8							
	TPU:	+/-18.5		+/-74.0							

#### Notes:

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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
- The TIC is a suspected aldol-condensation product Α
- В Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- С Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- Н Analytical holding time was exceeded
- T 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
- Х 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

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# Workorder: 163741 Parmname NOM ^ NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

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 acceptence 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: 168404 SDG: MSR #06-0652, 06-0675, 06-0687, 06-0688, 06-0707, 06-0743, 06-0755

#### August 15, 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 May 5, May 9, May 12, May 17, May 26, June 2, June 8, 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>Client Sample ID</u></b>
9106-0002-007F
9106-0002-011F
9106-0003-004F
9106-0003-015F
9106-0004-005F
9106-0004-015F
9106-0005-010F
9106-0005-014F
9106-0006-005F

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168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F

#### **Items of Note:**

At the request of Dale Randall on July 20, 2006, GEL analyzed the above samples according to the spreadsheet in the attached email.

#### 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:

Seven soil samples were reanalyzed for FSSALL, except gamma and Sr-90. Four soil samples were reanalyzed for FSSALL, except gamma and Ni-63. Two soil samples were reanalyzed for FSSALL, except gamma. Two soil samples were reanalyzed for FSALL, except gamma, Sr-90 and Ni-63.

#### 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.

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Cheryl Jones Project Manager

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1684041,

Subject: Additional HTD analyses From: "Dale Randall" <randall@cyapco.com> Date: Thu, 20 Jul 2006 11:04:54 -0400 To: "Cheryl Jones" <cj@gel.com> CC: "Clyde Newson" <Newson@CYAPCO.com>, "John McCarthy" <McCarthy@CYAPCO.com>

Cheryl:

Per our earlier discussion, attached is a list of samples that we would like to have analyzed to the FSSALL protocol. I have included a list of test protocols performed on each sample to date. Once you have had an opportunity to determine our options for each sample please call or e-mail me at your convenience.

Thank You,

Dale

(860) 267-3133

i.	<b>Content-Description</b>	GEL FSSALL analyses request.xls	
GEL FSSALL analyses request.xls	<b>Content-Type:</b>	application/vnd.ms-excel	
	<b>Content-Encoding:</b>	base64	:
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			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
164220008	9106-0002-007F	x	x		X	X		X	X	X	X	X	X
164220012	9106-0002-011F	x	x		X	x		x	X	X	X	X	X
162335004	9106-0003-004F	X			X	X	X	x	X	x	×	x	x
162335014	9106-0003-015F	x			X	x	x	x	X	X	X	x	X
162832015	9106-0004-005F	X	x		X	X		x	X	X	X	X	X
162832009	9106-0004-015F	X	x		X	x		X	x	X	x	X	X
162485008	9106-0005-010F	X	x		X	X		X	X	X	X	x	X
162485011	9106-0005-014F	X	X		X	X		X	X	X	X	X	x
162850014	9106-0006-005F	x	X		X	x		x	X	X	x	X	X
163741005	9106-0008-006F	X	X	<b>X</b>	X	x		X	X		x	x	X
163741009	9106-0008-008F	X	X	X	X	X		X	X		X	x	x
164542008	9106-0009-002F	x		X	X	X	X	x	X		X	X	x
164542003	9106-0009-017F	X		X	X	X	X	x	X		X	X	X
163105009	9106-0010-001F	x		X	X	x	X	X	X		x	X	X
163105016	9106-0010-012F	X		X	×	X	x	X	X		x	X	X

# Chain of Custody and Supporting Documentation

Relog 168404

Health Physics Procedure

GPP-GGGR-R5104-003-Attachment B-CY-001 Major

Page 7 of	Connecticut Y 362 Injun F	ankee At Hollow Road, E 860-267	ast Hampton,			у	<u> </u>		Cha	ain of	Custody	Form No.	2006-00371
105	Project Name: Haddam No							A	alvses	Requeste	ed	Lab Use Only	
5(	Contact Name & Phone: Jack McCarthy 860-267-							,			Comments:		
	Analytical Lab (Name, Cit General Engineering Labor 2040 Savage Road. Charles 843 556 8171. Attn. Chery	ratories ston SC. 294	107				FSSGAM	FSSALL	Sr-90				
	Priority: 🛛 30 D. 🗌 14 D	0. 🗍 7 D.			Sample	Container Size-					1	164	220%
	Sample Designation	Date	Time	Media Code	Type Code	&Type Code	ļ			} [		Comment, Preservation	Lab Sample ID
	9106-0002-001F	5/17/06	10:42	SE	C	BP	x		X			Transferred from COC 2006-00357	
	9106-0002-002F	5/18/06	09:43	SE	Ĉ	BP	ļ	x				Transferred from COC 2006-00361	
	9106-0002-003F	5/18/06	10:14	SE	C	BP	x	<u> </u>	X			Transferred from COC 2006-00361	
	9106-0002-004F	5/18/06	10:39	SE	C	BP	X		X			Transferred from COC 2006-00361	
	9106-0002-005F	5/18/06	12:49	SE	С	BP	X		X	1		Transferred from COC 2006-00364	
	9106-0002-006F	5/18/06	13:14	SE	С	BP	X		X			Transferred from COC 2006-00364	
	9106-0002-006FS	5/18/06	13:14	SE	C	BP	X		X			Transferred from COC 2006-00364	
	9106-0002-007F	5/18/06	13:37	SE	C	BP	X		X			Transferred from COC 2006-00364	
	9106-0002-008F	5/18/06	14:04	SE	C	BP	X		X			Transferred from COC 2006-00364	
	NOTES: PO #: 002332 N	MSR #: 06- บา ร่			LTP QA		lwaste	QA	☐ No	on QA		Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed?
	1) Relinquished By	61	Date/Tim		2) Recei	ved By		6.	02.	Date/T	ime 9'.20	🗋 Other	Custody Seal Intact?
l	3) Relinguished By		Date/Tim		4) Recei	ved By				Date/T	ime	Bill of Lading # 7909 4145 5710	YONO
	5) Relinquished By		Date/Tim	e	6) Recei	ved By				Date/T	ime		

Page 8 c	Connecticut Y 362 Injun F	ankee At Iollow Road, E 860-267	ast Hampton,			y			Cha	ain of	f Custody	Form <sub>No.</sub>	2006-00372
of 105	Project Name: Haddam Ne							A	nalyses	Request	ted	Lab Use Only	
05	Contact Name & Phone: Jack McCarthy 860-267-		<u>×</u> _									Comments:	
	Analytical Lab (Name, Cit General Engineering Labor 2040 Savage Road. Charle 843 556 8171. Attn. Chery	ratories ston SC. 294	407				FSSGAM	FSSALL	Sr-90				
	Priority: 🛛 30 D. 🗌 14 D	). 🗌 7 D.		) )	Sample	Container Size-							
	Sample Designation	Date	Time	Media Code	Type Code	&Type Code		ł				Comment, Preservation	Lab Sample ID
	9106-0002-009F	5/18/06	14:28	SE	C	BP		X				Transferred from COC 2006-00364	
	9106-0002-010F	5/18/06	14:50	SE	C	BP	X		X			Transferred from COC 2006-00364	
	9106-0002-011F	5/19/06	08:10	SE	C	BP	X		X			Transferred from COC 2006-00365	
	9106-0002-012F	5/19/06	08:31	SE	C	BP	X		X			Transferred from COC 2006-00365	<u></u>
	9106-0002-013F	5/19/06	09:00	SE	C	BP	X		X			Transferred from COC 2006-00365	
	9106-0002-014F	5/19/06	09:58	SE	Ċ	BP	X		X		· · ·	Transferred from COC 2006-00365	
	9106-0002-014FS	5/19/06	09:58	SE	C	BP	X		X			Transferred from COC 2006-00365	ļ
	9106-0002-015F	5/19/06	10:29	SE	C	BP	X		X			Transferred from COC 2006-00365	
i	9106-0002-016F	5/19/06	13:19	SE	С	BP	X		X			Transferred from COC 2006-00365	· · · · · · · · · · · · · · · · · · ·
	NOTES: PO #: 002332 1	MSR #: 06- 0755			LTP QA	C Rad	lwaste	QA	No	on QA		Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed?
	1) Relinquished By 3) Relinquished By	2 6	Date/Tim Date/Tim	875	2) Rece 4) Rece	Lune_		(	e-2.06	Date/ Date/	120	Dill of Loding #	Custody Seal Intact? Y D N D
	5) Relinquished By		Date/Tim	1e	6) Rece	ived By				Date/	Time	Bill of Lading # -7909 41:45 5709	

**Connecticut Yankee** С Statement of Work for Analytical Lab Services CY-ISC-SOW-00 Figure 1. Sample Check-in List Date/Time Received: MSR#06-075 SDG#: 42201 Work Order Number 2006 OO. Shipping Container ID: Chain of Custody # Custody Seals on shipping container intact? Yes [X] No [ Custody Seals dated and signed? 2. Yes 🖡 3. Chain-of-Custody record present? Yes [ X No [ ] Cooler temperature 4. 5, Vermiculite/packing materials is: Wet [] Dry [] 1000 Bot 6. Number of samples in shipping container: 7. Sample holding times exceeded? Yes [ ] No 8. Samples have: tape hazard labels custody seals appropriate sample labels 9. Samples are: in good condition leaking broken have air bubbles 10. Were any anomalies identified in sample receipt? Yes [ ] No [ ] Description of anomalies (include sample numbers) 11. Sample Custodian/Laboratory ALINO. 62.06 Date Telephoned to: On

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**Connecticut Yankee** Statement of Work for Analytical Lab Services CY-ISC-SOW-001 Figure 1. Sample Check-in List Date/Time Received MSR#06-0755 SDG#: 164220% Work Order Number: Chain of Custody # 2006 = 00375101 Shipping Container ID: 10 Yes 🕅 No [ ] Custody Seals on shipping container intact? Custody Seals dated and signed? 2. Yes 🕻 | No [ ] 3. Chain-of-Custody record present? ] No [ ] Cooler temperature 4. Wet [] Dry []hopackin] botwet Vermiculite/packing materials is: 5. Number of samples in shipping container: 6. 7. Sample holding times exceeded? Yes [ ] No 1 8. Samples have: tape hazard labels custody seals appropriate sample labels 9. Samples are: in good condition leaking broken have air bubbles 10, Were any anomalies identified in sample receipt? Yes [ ] No [ Description of anomalies (include sample numbers) 11. 1 Sample Custodian/Laboratory:\_ 6 206 Date: Telephoned to: On

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#### SAMPLE RECEIPT & REVIEW FORM •

"ATORIES"				PM use only					
Client: Connecticut Yon K.	PC			SDG/ARCOC/Work Order: 164220					
Date Received: 6.2.06				PM(A) Review (ensure non-conforming_items are resolved prior to signing):					
Received By:				Cliveton					
	7								
Sample Receipt Criteria	Yes	NA	°N	Comments/Qualifiers (Required for Non-Conforming Items)					
1 Shipping containers received intact and sealed?	t			Circle Applicable: seals broken damaged container leaking container other (describe)					
Samples requiring cold 2 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)?		1	, ,	Sample ID's and containers affected:					
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)									
8 Samples received within holding time?			10	d's and tests affected:					
9 Sample ID's on COC match ID's on bottles?			S	imple ID's and comainers affected:					
10 Date & time on COC match date & time on bottles?			Sa	mple ID's affected:					
11 Number of containers received match number indicated on COC?			Sa	mple ID's affected:					
12 COC form is properly signed in relinquished/received sections?			T	Coc # 2006-00371					
Air Bill, Tracking #'s, & Additional Comments									
Suspected Hazard Information	<b>Regulated</b> <b>Regulated</b>	High Level	reg	O RAD Receipt #					
Radiological Classification? PCB Regulated?			Max	kimum Counts Observed*: 25 CPM					
Shipped as DOT Hazardous				nmenis:					
Material? If yes, contact Waste			Haz	ard Class Shipped:					
Manager or ESH Manager.			UN	/:					
PM (or PMA) review of Hazard classific	ation:			Initials (1991 - Data: 101-1					
Page 11 of 105				Initials Date: 0206					

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## SAMPLE RECEIPT & REVIEW FORM

	PATORIES'		_			PM use only				
- 6	client: Connecticut Conk	ec				SDG/ARCOC/Work Order: /6.4220				
	Date Received: 6-2.06					PM(A) Review (custure non-conforming items are resolved prior to signing):				
- 6	Received By: 9					Clipton				
	Sample Receipt Criteria		Yes	NA	°Z	Comments/Qualifiers (Required for Non-Conforming Items)				
	1 Shipping containers received inta and sealed?	act				Circle Applicable: seals broken damaged container leaking container other (describe)				
	Samples requiring cold 2 preservation within (4 +/- 2 C)? Record preservation method.	,			_	Circle Coolant # ice bags blue ice dry ice none other describe)				
	Chain of custody documents included with shipment?									
Ľ	A Sample containers intact and sealed?					Circle Applicable: seals broken damaged container leaking container other (describe)				
!	Samples requiring chemical preservation at proper pH?					Sample ID's, containers affected and observed pH:				
	VOA vials free of headspace $(defined as < 6mm bubble)?$			X		Sample ID's and containers affected:				
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)									
8	Samples received within holding time?	Τ				Id's and tests affected:				
9	Sample ID's on COC match ID's on bottles?	Τ			1	Sample ID's and containers affected:				
10	Date & time on COC match date & time on bottles?	Γ				Sample ID's affected:				
1	Number of containers received match number indicated on COC?				s	ample ID's affected:				
2	COC form is properly signed in relinquished/received sections?				Ť	Coc # 2006-00372 041 6/2/06				
4	Air Bill , Tracking #'s, & Additional Comments									
	Suspected Hazard Information	Non- Regulated	Regulated	High Level	*I re	SO RAD Receipt #				
	CB Regulated?		M			aximum Counts Observed*: 20 C.P.M				
	hipped as DOT Hazardous					mments:				
N	faterial? If yes, contact Waste	,			Ha	zard Class Shipped:				
N	fanager or ESH Manager.				UN	i#:				
P	M (or PMA) review of Hazard classi	<b>V</b>	on•							
	Page 12 of 105					Initials Date: QZOb				
						$\sim$				

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Page 13		Iollow Road, E 860-267	ast Hampton, -2556			у	+6.	233	Ch: 34%		f Cus ,233	5%		No. 2006-00312
of	Project Name: Haddam N	eck Decomn	nissioning					Ana	lyses R	equeste	d	Ĺ	ab Use Only	
105	Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext. 3	3024									,Ĉ	omments:	
	Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones Priority: X 30 D. 14 D. 7 D.					SSGAM	FSSALL	Sr-90		I				
				Sample	Container Size-	нц								
	Sample Designation	Date	Time	Media Code	Type Code	& Type Code		}					Comment, Preservation	Lab Sample ID
<sub>ل</sub> هر	9106-0003-001F	4/24/06	14:13	SE	С	BP	X					Т	ransferred from COC2006-00221	
02	9106-0003-002F	4/24/06	14:39	SE	C	BP	x		†			Т Т	ransferred from COC2006-00221	
03	9106-0003-003F	4/24/06	15:01	SE	С	BP	X		1		<u> </u>	Т	ransferred from COC2006-00221	
N <sup>*</sup>	9106-0003-004F	4/25/06	08:41	SE	С	BP	X		1	1		Т	ransferred from COC2006-00223	
5	9106-0003-004FS	4/25/06	08:41	SE	С	BP	X			1		ТТ	ransferred from COC2006-00223	
ok	9106-0003-005F	4/25/06	09:21	SE	С	BP	X					Т	ransferred from COC2006-00223	
ó	9106-0003-006F	4/25/06	09:46	SE	С	BP	X					Т	ransferred from COC2006-00223	
	9106-0003-007F	4/25/06	10:28	SE	C	BP	X	[				Т	ransferred from COC2006-00223	
Ň	9106-0003-008F	4/25/06	11:15	SE	C	BP		X				T	ransferred from COC2006-00223	
-	NOTES: PO #: 002332 M Combined samples 9106-0003-003F	MSR #: 06- taken on 4/25/06	5 G 52 5 @08:19 and 9	<b>VP# NA</b> 9106-0003-4				adwast			on QA le for cou	nting.	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp. Deg. C Custody Sealed?
	1) Relinquished By Date/Time 2) Received By JAIME RICARTE. 5-4-06/13:30						tto		5/5	Date/	Time 1015	5	Other	Custody Seal Infact?
	3) Relinquished By		Date/Tim	e	4) Recei	ved By				Date/	Time		Bill of Lading #	YOND
	5) Relinquished By		Date/Tim	e	6) Recei	ved By				Date/	Time		7920-8920-02-10	

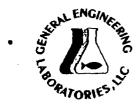
Page 14 of		Hollow Road, E 860-267	ast Hampton -2556			y		162	233	ų:Į.	16:	233		No. 2006-00313
f 10	Project Name: Haddam N	leck Decomm	nissioning					Anal	yses Re	quested			Use Only	
105	Contact Name & Phone: Jack McCarthy 860-267	-2556 Ext. 3	8024	]								,Cón	inents:	
	Analytical Lab (Name, Cin General Engineering Labo 2040 Savage Road. Charles 843 556 8171. Attn. Cher	oratories eston SC. 294	107				FSSGAM	FSSALL	Sr-90					
	Priority: 🛛 30 D. 🗌 14 🛙	D. 🗌 7 D.		Media	Sample Type	Container Size- &Type								
	Sample Designation	Date	Time	Code	Code	Code						_ [	Comment, Preservation	Lab Sample ID
wq	9106-0003-009F	4/25/06	13:00	SE	С	BP	Х					Trans	sferred from COC 2006-00236	
010	9106-0003-010F	4/25/06	13:23	SE	C	BP	X					Trans	sferred from COC 2006-00236	
oil	9106-0003-010FS	4/25/06	13:23	SE	C	BP	X					Tran	sferred from COC 2006-00236	
012	9106-0003-012F	4/25/06	15:12	SE	C	BP	Χ					Tran	sferred from COC 2006-00236	
015	9106-0003-013F	4/25/06	14:21	SE	C	BP	Х					Tran	sferred from COC 2006-00236	
019	9106-0003-014F	4/25/06	14:48	SE	С	BP		X					sferred from COC 2006-00236	
olit	9106-0003-015F	4/26/06	08:16	SE	С	BP	X						sferred from COC 2006-00237	
olS	9106-0003-016F	4/26/06	09:41	SE	C	BP	X						sferred from COC 2006-00237	
N	9106-0003-017F	4/26/06	09:18	SE	C	BP	X	<u> </u>		L			sferred from COC 2006-00237	
617	9106-0003-018F	4/26/06	08:59	SE	C	BP	X			<u> </u>		Tran	sferred from COC 2006-00237	
	NOTES: PO #: 002332	MSR #: 06-	96 <i>5</i> 2 SSV	WP# NA	$\boxtimes$	LTP QA		Radwa	iste QA		Non (	QA	Samples Shipped Via: Si Fed Ex UPS Hand	Internal Container. Femp:Deg C Clandy Seana?
	1) Relinquished By SAIME REARTE. 3) Relinquished By	5-1	Date/Tim -06 /13	30		Derri	co t	2	5/5/	Date/	101	5	C Other	Custody Seaf Iniact?
	S Kennquisned By				4) Rece	ivea By				Date/	1 ime		Bill of Lading # 7920-8920-0261	<ul> <li>State 1</li> <li>State 2</li> <li>State 2</li></ul>

Chery!		
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	Chery!	162335
Connecticut Yank Statement of Work	ee for Analytical Lab Services	CY-ISC-SOW-001
	Figure 1. Sample Check	· · · .
Date/Time Receive	d: 5506 1015. MSR#06-0652	
SDG#:	•	······································
· · ·		Custody # $\frac{200}{a^{-}003}$
1. Custody Se	ID: <u>1920 8920 026</u> Chain of 0240 als on shipping container intact?	2006 - 00313 Yes [] No M
	als dated and signed?	Yes [ ] No M
3. Chain-of-C	ustody record present?	Yes 1 No [ ]
4. Cooler temp	perature 9° C	
. 1	/packing materials is:	Wet [] Dry [] <u>NA-</u>
	,	offen [19] nine
	ding times exceeded?	Yes [] No X
8. Samples have:		
tape	hazard labels	•
	ly sealsappropriate samp	le labels
9. Samples are:		
· · · ·	od conditionleaking	
broke	nhave air bubbl	es
10. Were any and	omalies identified in sample receipt?	Yes [] No 🕅
11. Description o	f anomalies (include sample numbers):	
	· · · · · · · · · · · · · · · · · · ·	•
lamata O da ti da la		/ /
Sample Custodian/La		Date:5/5/06
	boratory: <u>CIDErvi cotto</u> On	Date: <u>5/5/06</u> By

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### SAMPLE RECEIPT & REVIEW FORM

	"OFATORIES,"				PM use only 162335					
С	ient: Yankel				SDG/ARCOC/Work Order:					
D	te Received: (094 5/5/C	16			PM(A) Review (ensure non-conforming items are resolved prior to signing):					
R	ceived By: C. Deni	co 41			Clin the					
				T						
		8			Comments/Qualifiers (Required for Non-Conforming Items)					
I	Sample Receipt Criteria	Yes	N N	z	Comments/Quarters (Kequited for Non-Comortining Reals)					
L	Las	<b>_</b>	┢──	╂───	Circle Applicable: seals broken damaged container leaking container other (describe)					
1	Shipping containers received intact and sealed?	1/	1	1						
┢	Samples requiring cold		┢──		Circle Coolant # ice bags blue ice dry ice none other describe)					
2	preservation within $(4 + /-2 C)$ ?			Ł						
[	Record preservation method.		V		1900 Peaputts					
3	Chain of custody documents	1.7								
Ľ	included with shipment?	V								
4	Sample containers intact and				Circle Applicable: seals broken damaged container leaking container other (describe)					
Ľ	sealed?	1 <u>v</u>								
5	Samples requiring chemical		1/	ł	Sample ID's, containers affected and observed pH:					
┝─	preservation at proper pH? VOA vials free of headspace		Ľ,		Sample ID's and containers affected:					
6	(defined as $< 6$ mm bubble)?		$\bigvee$							
┢╴	Are Encore containers present?	†								
7	(If yes, immediately deliver to									
L	VOA laboratory)	ļ								
8	Samples received within holding				ld's and tests affected:					
Ļ	time?	Ľ			Develo TDI					
9	Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:					
10	Date & time on COC match date				Sample ID's affected:					
10	& time on bottles?	V								
11	Number of containers received				Sample ID's affected:					
_	match number indicated on COC?									
12	COC form is properly signed in	$\checkmark$								
	relinguished/received sections?		10							
	Air Bill , Tracking #'s, &	172	dC	لر بر	7920 8920 0261					
14	Additional Comments				<u>6746</u>					
				_						
		<u> </u>	ted		RSO RAD Receipt #					
	Suspected Hazard Information	Non- Regulated	ula		*If > x2 area background is observed on samples identified as "non- regulated/non-radioactive", contact the Radiation Safety group for further					
		2 2	Regulated		investigation.					
	Radiological Classification?		2	_	Maximum Counts Observed*: 30 CPM					
	PCB Regulated? Shipped as DOT Hazardous				Comments:					
•	Material? If yes, contact Waste				Hazard Class Shipped:					
_	Manager or ESH Manager.	$\checkmark$			UN#:					
	PM (or PMA) review of Hazard class	sificati	on:		Initials Date: 515/06					
	Page 16 of 105									

4 I. I.I.

Health Physics Procedure

Connecticut 362 Injur	n Hollow Road,				y			Ch	ain of	Cus	tody	y Form	No. 200	06-00336
Project Name: Haddam	Neck Decom	missioning					Anal	yses Re	quested		al.ab	The Only I was a life		
Contact Name & Phone: Jack McCarthy 860-26	7-2556 Ext.	3024	1								ičs,			
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.			Sample	Container Size-	FSSGAM	FSSALL	Sr-90							
Sample Designation	Date	Time	Media Code	Type Code	&Type Code		ļ			ł		Comment, Preservation		September 10
9106-0004-001F	05/3/06	09:37	SE	С	BP		X	X	<u>├──</u>		Trans	iferred from COC 2006-00316		
9106-0004-002F	05/3/06	09:56	SE	Ċ	BP	x		X	<u>├</u>		Trans	iferred from COC 2006-00316		
9106-0004-003F ·	05/3/06	10:28	SE	C	BP	x		X			Trans	ferred from COC 2006-00316		
9106-0004-004F	05/3/06	10:48	SE	С	BP	X		X			Trans	ferred from COC 2006-00316		
9106-0004-004FS	05/3/06	10:48	ŠE	C	BP	X		X			Trans	sferred from COC 2006-00316	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
9106-0004-005F	05/3/06	11:07	SE	C	BP	X		X			Trans	ferred from COC 2006-00316		
9106-0004-006F	05/3/06	12:46	SE	C	BP	X		X			Trans	sferred from COC 2006-00317		
9106-0004-007F	05/4/06	07:55	SE	С	BP	X		X	1		Tran	sferred from COC 2006-00320		
9106-0004-017F	05/4/06	09:27	SE	Ç	BP	X		X		_	Tran	sferred from COC 2006-00320		
		· ·									<u> </u>			11 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NOTES: PO #: 002332	MSR #: 06-	0688 SSW	P# NA		LTP QA	[] I	Radwas	te QA		on QA		Samples Shipped Via: Ø Fed Ex UPS ☐ Hand	dinar Jenur Cust	al teleminet 1 2 novec 1 2 novec
1) Relinquished By	Date/Tim		2) Received By Date/Time C. Deui (5th Size On 097D Other						Other		V Stallinger			
3) Relinquished By		Date/Time	e 	4) Recei	ved By		·		Date/Ti	me		Bill of Lading # 7414-3895-8881		

GPP-GGGR-R5104-003-Attachment B-CY-001 Major Health Physics Procedure \*\*\*\* 1 **Chain of Custody Form** No. 2006-00337 **Connecticut Yankee Atomic Power Company** 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556 Analyses Requested Project Name: Haddam Neck Decommissioning Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024 Analytical Lab (Name, City, State) FSSALL FSSGAM General Engineering Laboratories Sr-90 2040 Savage Road. Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones Priority: 🛛 30 D. 🗍 14 D. 🦳 7 D. Container Sample Size-Media Type &Type Comment, Preservation Sample Designation Time Date Code Code Code Transferred from COC 2006-00320 9106-0004-008F X 5/04/06 08:58 SE C BP Х Transferred from COC 2006-00320 Х 9106-0004-009F Х 5/04/06 08:23 SE C BP Transferred from COC 2006-00317 X 9106-0004-010F 5/03/06 SE  $\overline{\mathbf{C}}$ BP X 15:11 Transferred from COC 2006-00317 9106-0004-010FS 5/03/06 SE Χ C BP X 15:11 Transferred from COC 2006-00317 9106-0004-011F· X 5/03/06 13:08 SE C BP X Transferred from COC 2006-00317 X 9106-0004-012F 5/03/06 SE C BP X 13:33 Transferred from COC 2006-00317 9106-0004-013F BP X 5/03/06 SE C Х Sec. 1 1000 13:54 Transferred from COC 2006-00317 9106-0004-014F ~ 5/03/06 SE C BP Χ X 14:43 Transferred from COC 2006-00317 BP 112. 2 116.15 9106-0004-015F 🖌 5/03/06 X 14:18 SE C X Internal Conta Samples Shipped Via: 🕅 LTP QA Radwaste QA Non QA NOTES: PO #: 002332 MSR #: 06-0685 SSWP# NA Fed Ex UPS Hand 1) Relinquished By Date/Time Date/Time 2) Received By Other 512.04 69:20 Received By Date/Time 3) Relinquished By Date/Time Bill of Lading # 7919 3895 8892

Connecticut Yankee Statement of Work for Analytical Lab Services	CY-ISC-SOW-001								
Figure 1. Sample Check-in List									
Date/Time Received: 5. 12. 0 (. 09.	20								
SDG#:MSR#06-0688									
Work Order Number: 162832 1.									
Shipping Container ID: 7919 3895 8892 Chain of Custody	# <u>2006-00337</u>								
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	<u> </u>								
5. Vermiculite/packing materials is:	Wet [/] Dry []								
6. Number of samples in shipping container:9									
7. Sample holding times exceeded?	Ycs [] No 💋								
8. Samples have:									
k tape hazard labels									
custody sealsappropriate sample labels	5								
9. Samples are:									
in good conditionleaking									
brokenhave air bubbles									
10. Were any anomalies identified in sample receipt?	Yes [] No []								
11. Description of anomalies (include sample numbers):	· · · · · · · · · · · · · · · · · · ·								
Sample Custodian/Laboratory: Enily Mark-	Date: 5. 12.0 6 09:20								
Telephoned to:OnBy	۷								

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	Connecticut Yankse Statement of Work for Analytical Lab Services	CY-ISC-SOW-00
	Figure 1. Sample Check-in Lis	<b>t</b>
	Date/Time Received: 5/12/11/ @ 0920	
•••••••••••••••••••••••••••••••••••••••	SDG#:NSR #06-0688	
•	Work Order Number: 162832  .	
	Shipping Container ID: 7919 3895 8692 Chain of Custon	ty # <u>2006 - 00337</u>
•	1. Custody Seals on shipping container intact?	Yes [ ] No [2]
	2. Custody Seals dated and signed?	Yes [] No <b>[4</b> ]
	3. Chain-of-Custody record present?	
	4. Cooler temperature ) 7° (	Yes \$ No [ ]
•		
	A second particulars 15.	Wet MDDry [1]
· · · · ·	the momphing container.	
	7. Sample holding times exceeded?	Yes [ ] No 63
	8. Samples have:	
- · ·	10 +	
		₹
	appropriate sample label	5 · · · · · · · · · · · · · · · · · · ·
	9. Samples are:	
	in good condition	
· · ·		
10	Were any anomalies identified in sample receipt?	Ver AAN to
· 11.	Description of anomalian (in 1	Yes [M] No [ ]
·		was busting out
· · · · · ·	ut container bag	
San	ple Custodian/Laboratory Ci Demir the	······
	phoned to:	Pate: S/b/04
	OnBy	



### SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

Fed Ex. Tok.#	(00#	# of containers
7920 9480 6688	2006-00332	(7) seven
6011	2006-00331	(0) Six
6655	2006 - 00 330	(6) Six
7919 3895 8881	20010-00336	(9) nine
- 8892	2006-00337	(9) nine
(this cooler had a		
busted sample	·	
CooleR & LOC is W/RSO		
Emily Martin)		
	·	
·		· · · · · · · · · · · · · · · · · · ·
	·	

Page 21 of 105



# SAMPLE RECEIPT & REVIEW FORM

	ATORIES'				PM use only					
Clie	أنوك بالمتحادثين ببني فالرحين المراجع المراجع المراجع والمراجع والمراجع والمراجع والمراجع				SDG/ARCOC/Work Order: 142832					
_	e Received: (12.04				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
	e Received: S. 12.04				Cher Man					
Ret	even by: Z. MS/IN									
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)					
1	Shipping containers received intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)					
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		X		Circle Coolant # ice bags blue ice dry ice none other describe)					
3	Chain of custody documents included with shipment?	X								
4	Sample containers intact and sealed?			x	Circle Applicable: seals broken damaged container leaking contained other (describe) SN: 9106 - 0004 - 014F					
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH:					
6	VOA vials free of headspace (defined as < 6mm bubble)?		x		Sample ID's and containers affected:					
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			X						
8	Samples received within holding time?	X			Id's and tests affected:					
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:					
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:					
ņ	Number of containers received match number indicated on COC?	X			Sample ID's affected:					
12	COC form is properly signed in relinquished/received sections?			X	Coc Not Yelinguished					
14	Air Bill , Tracking #'s, & Additional Comments				7919 3895 8892					
	Suspected Hazard Information	Non- Regulated	Regulated	High Level	RSO RAD Receipt #					
	Radiological Classification?		X		Maximum Counts Observed*: < Blegd					
	PCB Regulated? Shipped as DOT Hazardous	X			Comments: Bkgd = 40 cpm					
C	Material? If yes, contact Waste Manager or ESH Manager.	x			Hazard Class Shipped: UN#: N/A					
L	Philot Philotreview of Hazard class	sificat	ion:		Initials 041 Date: 5/12/06					



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## SAMPLE RECEIPT & REVIEW FORM

	"ATORIES"				PM use only
6	lient: VanKel				SDG/ARCOC/Work Order: 162832,
- L	Date Received: 5/12/00				PM(A) Review (ensure non-conforming items are resolved prior to signing):
h,	Leceived By: CIDENTICOTE				Curth
		4	-		······································
	Sample Receipt Criteria		B	<b>X</b>	Comments/Qualifiers (Required for Non-Conforming Items)
T	Shipping containers received intainand scaled?	ct v	1		Circle Applicable: seals broken damaged container leaking container other (describe)
	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.			1	Circle Coolant II ice bags blue ice dry ice (none) other describe)
	Chain of custody documents included with shipment?	~			COUS are wet
	Sample containers intact and sealed?			v	Circle Applicable: scals broken damaged cookiner leaking container (describe) busted bag w/ RSOs (00/11 7970 9480 total (1)
5	Samples requiring chemical preservation at proper pH?		v	1	Sample ID's, containers affected and observed pH: 8892
6	VOA vials free of headspace (defined as < 6mm bubble)?		~	1	Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			v	1
8	Samples received within holding time?	$\checkmark$			ld's and tests affected:
9	Sample ID's on COC match ID's on bottles?	V			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	1			Sample ID's affected:
11	Number of containers received match number indicated on COC?	V			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?			ノ	no cocs are relinguished
14	Air Bill, Tracking #'s, & Additional Comments	Fe	dE	* #	see contribuation sheet
		Non- Regulated	Regulated	High Level	RSO RAD Receipt #
	Radiological Classification?		V		Maximum Counts Observed*: 100 40 CPM
	PCB Regulated?	4			Comments:
	Shipped as DOT Hazardous				Hazard Class Shipped:
	Material? If yes, contact Waste				UN#:
	Manager or ESH Manager.				
1	PM (or PMA) review of Hazard class	ificati	on:		Initials Date: 5 12 06
	Page 23 of 105				

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	in Hollow Road, 860-26	East Hampton 7-2556	<b>wer (</b> , CT 0642	Compan 24	ıy			Ch	ain (	of C	Custo	dy Form	No. 2006-00319
Project Name: Haddam	Neck Decom	missioning	T		T		Ana	vses Re	queste	d	1	alutse on the second second	i a sea a
Contact Name & Phone: Jack McCarthy 860-26		3024		}				ĺ					
General Engineering La 2040 Savage Road. Char	nalytical Lab (Name, City, State) eneral Engineering Laboratories 40 Savage Road. Charleston SC. 29407 3 556 8171. Attn. Cheryl Jones					FSSGAM	FSSALL	Sr-90					
Priority: 🛛 30 D. 🗌 14			Media	Sample Type	Container Size- &Type	L.	L.						
Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation	Study States BDa
9106-0005-010F	5/02/06	13:16	SE	С	BP	X		X			T	ransferred from COC 2006-00314	
9106-0005-011F	5/02/06	13:39	SE	C	BP	X		X			Т	ransferred from COC 2006-00314	
9106-0005-013F	5/02/06	14:35	SE	C	BP	X		X			Ť	ransferred from COC 2006-00314	
9106-0005-014F	5/02/06	15:04	SE	C	BP	X		X			T	ransferred from COC 2006-00314	
9106-0005-016F	5/02/06	13:59	SE	C	BP	X		X			Ti	ransferred from COC 2006-00314	
9106-0005-015F	5/03/06	08:03	SE	C	BP	X		X			Ť	ransferred from COC 2006-00316	Constant and the second second
9106-0005-017F	5/03/06	08:13	SE	C	BP	X		X			T	ransferred from COC 2006-00316	
9106-0005-018F	5/03/06	09:09	SE	C	BP	X		X			Ti	ransferred from COC 2006-00316	
9106-0005-018FS	5/03/06	09:09	SE	C	BP	X		X			T	ransferred from COC 2006-00316	
NOTES: PO #: 002332	 MSR #: 06-0	675	SSWP#	NA	LTP	QA	Ra	dwaste	QA		Non Q	A Samples Shipped Via: ⊠ Fed Ex □ UPS □ Hand	thiomailescanaria biografiescanaria biografiescanaria biografiescanaria
1) Relinquished By	<u>p 5</u> .	Date/Time 806 /4 Date/Time	140	2) Receiv 4) Receiv	HU	2			Date/	6	593	O Cther	
·····										- 1110		Bill of Lading # 1920 9195 435	2

	Connecticut Yankee Statement of Work for Analytical Lab Services	CY-ISC-SOW-001	•
-	Figure 1. Sample Check-in List		•••
	Date/Time Received: 5/9/06 0930 .		•
	SDG#: MSR#06-0675		
	Work Order Number: 1624851.		
:	Shipping Container ID: 7920 9195 4352, 4363 Chain of Custody	# 2006-00318 002	319
	1. Custody Scals on shipping container intact?	Yes [] No []	
	2. Custody Seals dated and signed?	Yes [1] No [ ]	,
· • •	3. Chain-of-Custody record present?	Yes [ ] No [ ]	
	4. Cooler temperature 18°C, 19°C		•
• • • • •	5. Vermiculite/packing materials is:	Wet [] Dry []	· · · · ·
	6. Number of samples in shipping container:18		
•. •	7. Sample holding times exceeded?	Yes [ ] No [/	· ·
	8. Samples have: <u>tape</u> hazard labels <u>custody seals</u> appropriate sample labe	a ls	
	9. Samples are: in good conditionleaking (Some brokenhave air bubbles	bags)	
,• • ·	10. Were any anomalies identified in sample receipt?	Yes [] No []	-
	11. Description of anomalies (include sample numbers):		•
· · ·		•	•
•	Sample Custodian/Laboratory:	Date: 5/9/06 0920	
	Telephoned to:OnB	β <b>γ</b>	-
			· ·
	Page 25 of 105		1. <b>F</b> R



## SAMPLE RECEIPT & REVIEW FORM

"AITORIES"		_		PM use only						
Client: ATMC				SDG/ARCOC/Work Order: 162485						
Date Received: 5/9/06				PM(A) Review (ensure non-conforming items are resolved prior to signing):						
Received By: BHC	میں آفرین ا			Clivet						
Active by Brie										
Sample Receipt Criteria	Yes	NA	°Z	Comments/Qualifiers (Required for Non-Conforming Items)						
Shipping containers received intac and sealed?	t			Circle Applicable: seals broken damaged container leaking container other (describe)						
Samples requiring cold	1			Circle Coolant # ice bags blue ice dry ice none other describe)						
2 preservation within $(4 + / - 2 C)$ ?	1									
Record preservation method.										
3 Chain of custody documents										
included with shipment?										
4 Sample containers intact and sealed?	K			Circle Applicable: seals broken damaged container leaking container other (describe)						
5 Samples requiring chemical preservation at proper pH?				Sample ID's, comainers affected and observed pH:						
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:						
Are Encore containers present?	1			Out a.						
7 (If yes, immediately deliver to VOA laboratory)				BHC 5/9/06						
8 Samples received within holding time?				Id's and rests affected:						
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?										
Air Dill Traching His 9	Fe	1 -	797	20 9195 4352 → 19°C						
14 Air Bill , Tracking #'s, & Additional Comments	Ex		• •	4363 → 18°C						
Additional Conditionits		•		7363 - 18-0						
	۾ ا	Ţ	Ģ.	RSO RAD Receipt #						
Suspected Hazard Information	Non- Regulated	Regulated		*If > x2 area background is observed on samples identified as "non-						
	Żş	Regu		regulated/non-radioactive", contact the Radiation Safety group for further						
A Radiological Classification?		7		Investigation. Maximum Counts Observed*: So Clim						
B PCB Regulated?				Comments:						
Shipped as DOT Hazardous										
C Material? If yes, contact Waste				Hazard Class Shipped: UN#:						
Manager or ESH Manager.										
PM (or PMA) review of Hazard class Page 26 of 105	sificati	on:	<u> </u>	Initials (A Date: 5906						

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Connecticut 362 Inju	Yankee At in Hollow Road, E 860-267	East Hampton			у			Ch	ain o	of Cus	stody	y Form	No. 2006-00332
Project Name: Haddam			r			<u> </u>	Anal	vses Re	questec	d		UNE CARY	
Contact Name & Phone: Jack McCarthy 860-26	:												
Analytical Lab (Name, C General Engineering La 2040 Savage Road. Cha 843 556 8171. Attn. Ch Priority: X 30 D. 14	boratories rleston SC. 294 heryl Jones	407			Container	FSSGAM	FSSALL	Sr-90					
			Media	Sample Type	Size- &Type	1	Ì	]			建設	Comment, Preservation	Talisampic 10
Sample Designation	Date	Time	Code	Code	Code					┟╌╍┝╾	Tron	sferred from COC 2006-00317	
9106-0006-004F	4/28/06	12:46	SE SE	C C	BP BP	X X		X X		╋╼╍╂╼		sferred from COC 2006-00317	
9106-0006-005F 9106-0006-006F	4/28/06	13:03 13:22	SE		BP BP	$\frac{\Lambda}{X}$	<u> </u>	X		╂╼╍╊╍		sferred from COC 2006-00317	
9106-0006-007F	4/28/06	13:41	SE	$\frac{c}{c}$	BP	$\frac{\Lambda}{X}$	<b>}</b>	$\frac{x}{x}$	┣────	++	Tran	sferred from COC 2006-00317	
9106-0006-007FS	4/28/06	13:41	SE		BP	$\frac{\Lambda}{X}$	<u> </u>	$\frac{\Lambda}{X}$		┼╼╌┠╌		sferred from COC 2006-00317	
9106-0006-012F	5/01/06	13:40	SE	<del>c</del>	BP	$\frac{\Lambda}{X}$	<u> </u>	X		╆╌┼╴	Тгал	sferred from COC 2006-00317	
9106-0006-017F.	5/01/06	14:03	SE	<del>c</del>	BP	x		X	<u> </u>	+-+	Tran	sferred from COC 2006-00317	
				t		<u> </u>		+	<u> </u>	+ +			
			<del> </del>	†			<u>                                      </u>	1	1	+ +-			
			1			1			1			··	
NOTES: PO #: 002332	MSR #: 06-0	2687 SSW	'P# NA		LTP QA	[] I	Radwas	ite QA	1	Non QA	<u> </u>	Samples Shipped Via: Fed Ex UPS Hand	Internal Contable Tenny: 1990 Desite
1) Relinquished By		Date/Tim	le '	2) Recei	ved By	Atto 512 10 0920						Diher	Gustody Seal Intert
3) Relinquished By	3) Relinquished By Date/Ti					Date/Time						Bill of Lading # 7 920- 9480- 6688	

	Connecticut Yankee Statement of Work for Analytical Lab Services CY-ISC-SOW-001
	Figure 1. Sample Check-in List
	Date/Time Received: $5100000970$
	SDG#:
	Work Order Number: [62850].
	Shipping Container ID: See con't sheet Chain of Custody #_ See con't sheet
•	1. Custody Seals on shipping container intact? Yes [] No [KD
• • •	2. Custody Seals dated and signed? Yes [] No
	3. Chain-of-Custody record present? Yes WDNo []
	4. Cooler temperature 1700
	5. Vermiculite/packing materials is: Wet BD Dry ful
	6. Number of samples in shipping container. <u>Jll: (on t shipting</u>
	7. Sample holding times exceeded? Yes [] No [
	Lapehazard labelshazard labels
	9. Samples are:
	in good conditionleaking
· ·	hmkan
	nave our hullt-
. 10	have air bubbles
10 11	Were any anomalies identified in sample receipt? Yes [] No FD
•	Were any anomalies identified in sample receipt? Yes [] No FD
11 	Were any anomalies identified in sample receipt? Yes [] No KP Description of anomalies (include sample numbers):
]]  San	Were any anomalies identified in sample receipt? Yes [] No KP Description of anomalies (include sample numbers): MA nple Custodian/Laboratory: CHQUAN (CH) &
]]  San	Were any anomalies identified in sample receipt? Yes [] No KP Description of anomalies (include sample numbers):
]]  San	Were any anomalies identified in sample receipt?       Yes [] No KP         Description of anomalies (include sample numbers):

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### SAMPLE RECEIPT & REVIEW FORM

"PITORIES"				PM use outy						
Client: VanKel				SDG/ARCOC/Work Order: 162832., 162850						
Date Received: 512.00				PM(A) Review (ensure non-conforming items are resolved prior to signing):						
Received By: CIDennicotte	· .			avan						
		_								
Sample Receipt Criteria	Yes	AN	Ž	Comments/Qualifiers (Required for Non-Conforming Items)						
1 Shipping containers received inta and sealed?	ct 🗸	t	T	Circle Applicable: seals broken damaged container leaking container other (describe)						
Samples requiring cold 2 preservation within (4 +/- 2 C)? Record preservation method.		/	1	Circle Coolant 1 ice bags blue ice dry ice none other describe) 17°C COUS ONU WH						
3 Chain of custody documents included with shipment?	1			$\sim$						
4 Sample containers intact and sealed?			V	Cincle Applicable: seals broken damaged container leaking container (other (describe)) bushed bag w/ RSOs (2011, 7920 9480 6005 (1						
5 Samples requiring chemical preservation at proper pH?	Τ	V	1	Sample ID's, containers affected and observed pH: 8892.						
6 VOA vials free of headspace (defined as < 6mm bubble)?			1	Sample ID's and containers affected:						
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)			V	ł						
8 Samples received within holding time?	~			Id's and lesis affected:						
9 Sample ID's on COC match ID's on bottles?	V			Sample ID's and containers affected:						
10 Date & time on COC match date & time on bottles?	1			Sample ID's affected:						
11 Number of containers received match number indicated on COC?				Sample ID's affected:						
COC form is properly signed in relinquished/received sections?			フ	no cocs are relinguished						
Air Bill , Tracking #'s, & Additional Comments	Fea	IEY	c #	see continuation sheet						
Suspected Hazard Information	Non- Regulated	Regulated	eh Le	RSO RAD Receipt #						
Radiological Classification?		$\checkmark$		Maximum Counts Observed*: 1000 40 CPA						
B PCB Regulated?	$\checkmark$			Comments:						
Shipped as DOT Hazardous Material? If yes, contact Waste				Hazard Class Shipped:						
Manager or ESH Manager.	ľ ľ			UN#:						
PM (or PMA) review of Hazard clas	siticati			Initials Date: 512-06						
Page 29 of 105				Initials Date: 5/2/06						



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#### SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

#ATORIES'	VAN	K 162832, 162850
Fed Ex Tekt	(00#	# of containers
7920 9480 6688	2006-00332	(7) seven
lelell	2006-00331	(0) Six
101055	2006 - 00 330	(6) Six
7919 3895 8881	2006-00336	(9) ninc
- 8892	2006-00337	(9) nine
(this cooler had a	N	
busted sample		
Cooler & COC is w/ RSO	· · · · · · · · · · · · · · · · · · ·	
Emily Martin)		
	]	
<del> </del>		
·	·	
		· · · · · · · · · · · · · · · · · · ·

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Page 31 c	Connecticut Y 362 Injun I	ankee At Hollow Road, H 860-26	East Hampton			y		163			f Cu		y Form	No. 2006-00367
of 105	Project Name: Haddam N	eck Decomr	nissioning							quested	1	Lat	Use Only	
20	Contact Name & Phone: Jack McCarthy 860-267-	3024				   					Co	mments:		
	Analytical Lab (Name, Cit General Engineering Labo 2040 Savage Road, Charle 843 556 8171. Attn. Cher	407				FSSGAM	FSSALL	Sr-90	Ni-63					
	Priority: 🛛 30 D. 🗌 14 D	D. □7 D.		Media	Sample Type	Container Size- &Type			01	4				· · · · · · · · · · · · · · · · · · ·
	Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation	Lab Sample ID
ſ	9106-0008-001F	5/05/06	11:13	SE	С	BP	X		X	Х		Tran	sferred from COC # 2006-00324	
Ī	9106-0008-003F	5/5/06	13:35	SE	С	BP	X		X	х		Tran	sferred from COC # 2006-00325	
	9106-0008-004F	5/5/06	13:51	SE	С	BP	X		X	X		Tran	sferred from COC # 2006-00325	
ſ	9106-0008-005F	5/5/06	14:17	SE	C	BP	X		X	X		Tran	sferred from COC # 2006-00325	
	9106-0008-006F	5/5/06	14:36	SE	Ċ	BP	X		X	X		Tran	sferred from COC # 2006-00325	
Ī	9106-0008-006FS	5/5/06	14:36	SE	C	BP	X		X	X		Tran	sferred from COC # 2006-00325	
Ì	9106-0008-007F	5/5/06	15:03	SE	С	BP		X				Tran	sferred from COC # 2006-00325	
	9106-0008-002F	5/5/06	13:10	SE	С	BP	X		X	X		Tran	sferred from COC # 2006-00325	
Ī														
[														
	NOTES: PO #: 002332 N	/ISR #: 06-(	)743 ssv	VP#NA		LTP QA		Radwa	ste QA	. 1	Non (	}A	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed? Y □ N □
Ī	1) Relinquished By	2 5-2	Date/Time		2) Recei	ved by	A	6		Pate/	~ ~	30	Other	Custody Seal Intact?
Į	3) Relinquished By		Date/Time		4) Recei	ved By			<u></u>	Date/1			Bill of Lading # 79, 27, 5454, 1162	Y D N D

Health Physics Procedure

Page 32	Connecticut Y 362 Injun I	ankee At Hollow Road, E 860-267	Sast Hampton			y			Cha	ain o	f Cu	-	y Form 163741	No. 2006-00366
of	Project Name: Haddam N							Anah	ses Re	quested		Lab	Use Only	
105	Contact Name & Phone: Jack McCarthy 860-267-			]								Con	nments:	
	Analytical Lab (Name, Cit General Engineering Labo 2040 Savage Road. Charle 843 556 8171. Attn. Cher	ratories ston SC. 294	407				FSSGAM	FSSALL	Sr-90	Ni-63				
I	Priority: 🕅 30 D. 🗌 14 🛙	). 🗌 7 D.		Malia	Sample	Container Size-	H							
	Sample Designation	Date	Time	Media Code	Type Code	&Type Code							Comment, Preservation	Lab Sample ID
DG	9106-0008-008F	5/08/06	08:01	SE	С	BP	X		X	X			iferred from COC # 2006-00327	
10	9106-0008-009F	5/08/06	08:32	SE	С	BP	X		X	X			sferred from COC # 2006-00327	
011		5/08/06	09:09	SE	C	BP	X		X	X			sferred from COC # 2006-00327	
	9106-0008-010FS	5/08/06	09:09	SE	C	BP	X		X	X		Trans	sferred from COC # 2006-00327	
115	9106-0008-011F	5/08/06	09:30	SE	C	BP	X		X	X			aferred from COC # 2006-00327	
. 4	9106-0008-012F	5/08/06	09:53	SE	C	BP		X				Tran	sferred from COC # 2006-00327	
	9106-0008-013F	5/08/06	10:16	SE	C	BP	X		X	X			sferred from COC # 2006-00327	
35	9106-0008-014F	5/08/06	10:47	SE	C	BP	X		X	X		Trans	sferred from COC # 2006-00327	
0		1												
	NOTES: PO #: 002332 1	MSR #: 06- <i>(</i>	0743 ssv	WP#NA		LTP QA		Radwa	ste QA		Non Q	A	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: <u>21</u> Deg. C Custody Sealed? Y I N 27
	1) Relinquished By		Date/Tim	e	2) Recei	ived By	who		5h	Date/		30	Other	Custody Seal Intact?
	3) Relinquished By		Date/Tim	ie	4) Recei	ived By				Date/			Bill of Lading #	Y 🖗 N 🗆

		· · · ·	· · · · ·	
Connecticut Yankee Statement of Work for Analyt	tical Lab Services	163741%	CY-ISC-SOW-00	•••••••••••••••••••••••••••••••••••••••
	Figure I. Sample C	heck-in List		<i></i>
Date/Time Received: 50	106 0930			
SDG#:			•	· . · ·
Work Order Number:		•		
Shipping Container ID: <u>79</u> ?	775154 1167 Cha	in of Custody #O	20-00367	
1. Custody Seals on ship	pping container intact?	Yes [·	7 No []	· .
2. Custody Seals dated a	nd signed?	Yes [	] No [7	
3. Chain-of-Custody rec	ord present?	Yes [-	1 No []	. •
4. Cooler temperature		6		· ·
<ol> <li>Vermiculite/packing n</li> <li>Number of samples in</li> </ol>		Wet [		•
7. Sample holding times		Yes [	] No []	• • • • • • •
8. Samples have: 	hazard labe	ls sample labels		
9. Samples are:				
in good conditionbroken	onleaking have air	bubbles		
10. Were any anomalies ide	entified in sample receipt?	Yes [ ]	No I	
·	es (include sample numbers			· · /
				• • •
Sample Custodian/Laboratory: C	KIR -	Date:	tyla a	þ
Telephoned to:	On		Harlanda C	
		By		
Page 33 of 105			1	

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## SAMPLE RECEIPT & REVIEW FORM

	"HIORIES"				PM use only						
				_	SDG/ARCOC/Work Order: 16374/1						
	iest: Conn. Yankee				PM(A) Review (ensure non-conforming items are resolved prior to signing):						
D	nte Received: 62606				PM(A) Review (consure non-consultance and a second pro-						
R	ceived By: (K.)										
-		<b></b>	T								
ĺ	Sample Receipt Criteria	Kes	M	ž	Comments/Qualifiers (Required for Non-Conforming Items)						
	Minhie Receipt Arnow	17		~							
$\mathbf{F}$	Shipping containers received intact	1	t	<b> </b>	Circle Applicable: scals broken damaged container leaking container other (describe)						
1	and sealed?	/									
	Samples requiring cold		Γ.		Circle Coolant # ice bags blue ice dry ice from other descri						
2	preservation within (4 +/- 2 C)?	1	V		R'C						
	Record preservation method.	•	Ĺ		MC						
	Chain of custody documents	17									
Ľ	included with shipment?	Ľ									
Γ	Sample containers intact and	17			Circle Applicable: seals broken damaged container leaking container other (describe)						
1	sealed?	<u>Ľ_</u>									
	Samples requiring chemical		2		Sample ID's, containers affected and observed pH:						
Ľ	preservation at proper pH?		Ĺ	L							
	VOA vials free of headspace	ł			Sample ED's and containers affected:						
Ľ	(defined as < 6mm bubble)?		Ľ								
Г	Are Encore containers present?			1	· · · ·						
7	(If yes, immediately deliver to										
	VOA laboratory)			Ĺ							
8	Samples received within holding				M's and tests affected:						
Ľ	time?	Ĺ.									
9	Sample ID's on COC match ID's				Sample ID's and containers affected:						
F	on bottles?	<b></b>			Cannala IDVa affartadi						
10	Date & time on COC match date				Sample ID's affected:						
	& time on bottles?				Sample ID's affected:						
11	Number of containers received	:/:			анаарис 112 в 619ССССО):						
Ĺ	match number indicated on COC?										
12	COC form is properly signed in										
-	relinquished/received sections?										
	Ain Dill Tracking Al-										
14	Air Bill , Tracking #'s, &										
	Additional Comments		7	92	1 5154 1162						
-				_							
		Non- Regulated	Regulated		RSO RAD Receipt #						
	Suspected Hazard Information		2		regulated/non-radioactive", contact the Radiation Safety group for further						
		ି କ୍ର	2		investigation.						
Ą	Radiological Classification?	$\mathbf{X}$	7		Maximum Counts Observed*: Opm 20 Per R50						
	PCB Regulated?	1			Comments:						
	Shipped as DOT Hazardous				Hannah Chana China at						
	Material? If yes, contact Waste	1			Hazard Class Shipped: UN#:						
	Manager or ESH Manager.										
	PM (or PMA) review of Hazard class	ificati	on:	Q	Initials 5/26/06 Date:						

Page 34 of 105.



#### SAMPLE RECEIPT & REVIEW FORM

PATORIES'				PM use only					
Client: Yankee				SDG/ARCOC/Work Order: 163741'1.					
Date Received: 5/24/04				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Received By: C. Quite	to			an					
		T	<b>T</b>						
Sample Receipt Criteria	Yes	AN	ź	Comments/Qualifiers (Required for Non-Conforming Items)					
1 Shipping containers received inta and sealed?	ct 🗸	1	Τ	Circle Applicable: seals broken damaged container leaking container other (describe)					
Samples requiring cold 2 preservation within (4 +/- 2 C)? Record preservation method.		/	ł	Circle Coolant / ice bags blue ice dry ice (one) other describe)					
3 Chain of custody documents included with shipment?	~	1							
4 Sample containers intact and sealed?	V	1		Circle Applicable: seals broken damaged container leaking container other (describe)					
5 Samples requiring chemical preservation at proper pH?		~	1	Sample ID's, containers affected and observed pH:					
6 VOA vials free of headspace (defined as < 6mm bubble)?		V	1	Sample ID's and containers affected:					
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)			V						
8 Samples received within holding time?	V			Id's and tests affected:					
9 Sample ID's on COC match ID's on bottles?	V			Sample ID's and containers affected:					
10 Date & time on COC match date & time on bottles?	1			Sample ID's affected:					
Number of containers received match number indicated on COC?				Sample ID's affected:					
COC form is properly signed in relinquished/received sections?	eg		$\checkmark$	not relinquisted					
Air Bill, Tracking #'s, & Additional Comments	79%	27	5	64 1173					
Suspected Hazard Information	, Non- Regulated	Regulated	High Lev	RSO RAD Receipt #					
Radiological Classification? PCB Regulated?		~		Maximum Counts Observed*: 40 CPM					
Shipped as DOT Hazardous				Comments:					
Material? If yes, contact Waste Manager or ESH Manager.				Hazard Class Shipped: JN#;					
PM (or PMA) review of Hazard clas	sificati	on:	91	InitialsD6Date:					
			-						

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Statement of w	lork for Analytical Lab Se	ervices		CY-ISC-SOW-001
	Fig	ure 1. Sample Check-in L	ist	
Date/Time Rec	eived: 5/210	6 @ 0930	· · · · · · · · · · · · · · · · · · ·	
SDG#:			· · · · ·	· · · · · · ·
Work Order Nu	umber:			
Shipping Conta	ainer ID: 79215154	LIITS Chain of Cus	ody #2001e	-003 lece
1. Custod	ly Seals on shipping contai	iner intact?	Yes No	[]
2. Custod	ly Seals dated and signed?		Yes UNo	[]
3. Chaia-	of-Custody record present	?	Yes LINo	
4. Cooler	temperature	, <b>t</b> o	·	
5. Vermio	culite/packing materials is:	:	Wet Dr	y`[\]
6. Numbe	er of samples in shipping c	container:(9) :	ght	
7. Sample	e holding times exceeded?		Yes [ ] No	[J
8. Samples	have:			
<u> </u>	ape	hazard labels	· · ·	
	custody seals	appropriate sample la	ibels	
9. Samples a	are:			
	in good condition	leaking		
· · · · · · · · · · · · · · · · · · ·	_broken	have air bubbles		
10. Were a	ny anomalies identified in	sample receipt?	Yes [ ] No	
11. Descrip	otion of anomalies (include	e sample numbers):	Np	
				· · · · · · · · · · · · · · · · · · ·
	· · · ·			
Sample Custodi	an/Laboratory:	u'cto	Date: 5/2	ulas
[elephoned to:_		On	_By	

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Health Physics Procedure

Page 37 of		in Hollow Road, 860-26	East Hampton 7-2556			ıy			Ch	ain o	of C		ody Form	No. 2006-00380
of 105	Project Name: Haddam	Neck Decom	nissioning					Anal	yses Re	queste	d		Lab Use Only	
5	Contact Name & Phone: Jack McCarthy 860-26		3024	]									Comments:	
:	Analytical Lab (Name, C General Engineering Lal 2040 Savage Road. Char 843 556 8171. Atm. Char Priority: X 30 D. 14	boratories rleston SC. 29 eryl Jones	407		Sample	Container Size-	FSSGAM	FSSALL	Ni-63					
ļ	Sample Designation	Date	Time	Media Code	Type	&Type Code	1.	<b>.</b> "i	-`			Ļ	Comment, Preservation	Lab Sample ID
-	9106-0009-016F	5/15/06	13:28	SE	Code	BP	x	<u> </u>	x		+	<u> </u>	Transferred from COC 2006-00352	Lao Sample IIS
_2	9106-0009-016FS	5/15/06	13:28	SE	C C	BP BP		<u> </u>	X		╉╼╍╌╂		Transferred from COC 2006-00352	·
~	9106-0009-017F	5/15/06	14:03	SE	<del>c</del>	BP	$\frac{x}{x}$	┨────	$\frac{\Lambda}{X}$		╉──┤		Transferred from COC 2006-00352	
503 316	9106-0009-011F	5/15/06	08:05	SE	c	BP		x			╂╾╼╉		Transferred from COC 2006-00351	
A L	9106-0009-013F	5/15/06	08:35	SE	C	BP	x		X		┼──┤		Transferred from COC 2006-00351	
1	9106-0009-013FS	5/15/06	08:35	SE	c	BP	X		X				Transferred from COC 2006-00351	
217	9106-0009-014F	5/15/06	08:59	SE	C	BP		x			┼╌╌┼		Transferred from COC 2006-00351	
ala	9106-0009-015F	5/15/06	09:36	SE	<del>c</del>	BP	x		x		╉╍╍╂		Transferred from COC 2006-00351	
•											╋╌╌╢		·····	+
	NOTES: PO #: 002332	MSR #: 06- <b>/</b>	9818 SSV	VP# NA		LTP QA		Radwa	ste QA		Non	QA	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed? Y D N D
ł	1) Relinquished By		Date/Time	e	2) Receiv	vad By	2			Date/	Time			Custody Seal Intact?
	JAME RICARTS	6	7.06/1110	-	h	Val	1-	٠	6-	8-0		90	• 🔲 Other	
ľ	3) Relinquished By		Date/Time		4) Receiv	ved By	~			Date/		<u> </u>		ΥΠΝΠ
							/						Bill of Lading #	
-					•									•

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Health Physics Procedure

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Page 38 c	Connecticut N 362 Injun	Yankee At Hollow Road, E 860-267	ast Hampton			y			Cha	ain o	f C	ustod	ly Form	No. 2006-00381
of 1	Project Name: Haddam I	Neck Decomn	nissioning					Anal	ses Red	ueste	1	La	b Use Only	
105	Contact Name & Phone: Jack McCarthy 860-267	7-2556 Ext.	3024							<b>*</b>		Co	omments:	
	Analytical Lab (Name, C General Engineering Lab 2040 Savage Road. Charl 843 556 8171. Attn. Che	oratories eston SC. 294	107				FSSGAM	FSSALL	Ni-63					
	Priority: 🛛 30 D. 🗌 14	D. 🗌 7 D.		Media	Sample Type	Container Size- &Type	<u>H</u>					L		·····
4	Sample Designation	Date	Time	Code	Code	Code	-						Comment, Preservation	Lab Sample ID
m7		5/11/06	13:22	SE	C	BP	X		X			Tra	nsferred from COC 2006-00347	
800	9106-0009-002F	5/11/06	13:46	SE	C	BP	X		x			Tra	nsferred from COC 2006-00347	
	9106-0009-003F	5/11/06	14:06	SE	C	BP	Х		X			Tra	insferred from COC 2006-00347	
~ `	9106-0009-004F	5/11/06	14:30	SE	C	BP	X		X			Tra	insferred from COC 2006-00347	
	9106-0009-005F	5/11/06	14:55	SE	C	BP	X		X			Tra	insferred from COC 2006-00347	
olz	9106-0009-007F	5/12/06	07:44	SE	C	BP	Х		X			Tra	insferred from COC 2006-00348	
0(3	9106-0009-008F	5/12/06	08:16	SE	C	BP	X		X			Tra	insferred from COC 2006-00348	
514	9106-0009-009F	5/12/06	08:35	SE	C	BP	X ·		X			Tra	nsferred from COC 2006-00348	
6(6	9106-0009-010F	5/12/06	09:07	SE	C	BP	X		X			Tra	insferred from COC 2006-00348	
	NOTES: PO #: 002332	SSV	VP# NA		LTP QA		Radwa	ste QA		Non	QA	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed? Y □ N □	
Ĩ	1) Relinquished By		Date/Time	9	2) Recei	red By			· · · · · ·	Date/	Time			Custody Seal Intact?
ļ	JAIME RICARTE	6-	7- 06/ 11:0		Å	M.L.			61			Ó	🔲 Other	
	3) Relinquished By		Date/Time		4) Recei	<b>6/g/06 900</b> Date/Time						Bill of Lading #	ΥΟΝΟ	
													7921 1915 2858	

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•	(hery) 164551%. (Pm 40	•
•	Connecticut Yankee Statement of Work for Analytical Lab Services CY-ISC-SOW-00	DI
	Figure 1. Sample Check-in List	· · ·
	Date/Time Received: 6-8-06 900	- · ·
. , , , , , , , , , , , , , , , , , , ,	SDG#:MSR#06-0819,0818	_
	Work Order Number:           7721 - 1915 - 2058         2005 - 00 3 52           Shipping Container ID:         11 - 5156         2005 - 00 3 52	-
· •	1. Custody Seals on shipping container intact? Yes [X] No []	•
··· ·	2. Custody Seals dated and signed? Yes [] No [X]	, 1977 
	<ol> <li>Chain-of-Custody record present? Yes [X] No []</li> <li>Cooler temperature <u>20°C</u></li> </ol>	•
•		-
. •	5. Vermiculite/packing materials is: Wet [] Dry 🕅	1
· .	6. Number of samples in shipping container:	- 
	7. Sample holding times exceeded? Yes [X No []	
• • • •	8. Samples have: <u>× tape</u> hazard labels <u>×</u> custody sealsappropriate sample labels	
. *	9. Samples are:	1
•	have air bubbles	
·	10. Were any anomalies identified in sample receipt? Yes [] No [X]	-
	11. Description of anomalies (include sample numbers):	
· ·		
•	Sample Custodian/Laboratory: AMaly Data: 6-8-06 900	
· · ·	Telephoned to:	
	OnBy	
· _	Page 39 of 105	•

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Fage 4	Connecticut Y 362 Injun J	ankee At Hollow Road, H 860-262	East Hampton			y			Cha	ain o	of Cu	stod	y Form	No. 2006-00349
d Proj	ect Name: Haddam N			{				Апа	yses Re	queste	d	Lat	Use Only	
Con	tact Name & Phone: McCarthy 860-267-									1		Con	nments:	
Gen 204	lytical Lab (Name, Cit eral Engineering Labo O Savage Road. Charle 556 8171. Attn. Cher	ratories ston SC. 294	407				SSGAM	FSSALL	Ni-63					
	rity: 🔀 30 D. 🗌 14 D	 	· · · · · · · · · · · · · · · · · · ·	Media	Sample Type	Container Size- &Type							163105%	<b>_</b>
	ple Designation	Date	Time	Code	Code	Code						_	Comment, Preservation	Lab Sample ID
910	6-0010-001F	5/04/06	1 <b>0:49</b>	SE	С	BP	X		X			_	sferred from COC 2006-00321	
910	6-0010-002F	5/04/06	11:12	SE	С	BP	X	l	X				sferred from COC 2006-00321	
910	6-0010-004F	5/04/06	12:48	SE	C	BP	X		X			-	sferred from COC 2006-00321	
910	6-0010-006F	5/04/06	13:34	SE	C	BP	X		X				sferred from COC 2006-00321	
<b>5</b> 910	6-0010-007F	5/04/06	13:21	SE	C	BP	X		X				sferred from COC 2006-00321	
910	6-0010-009F	5/04/06	14:01	SE	C	BP	X		X			Тгал	sferred from COC 2006-00321	
5 910	6-0010-010F	5/04/06	14:21	SE	С	BP	X	L	X			Tran	sferred from COC 2006-00321	
910	6-0010-012F	5/04/06	14:44	SE	Ć	BP	X		X				sferred from COC 2006-00321	
910	6-0010-013F	5/04/06	15:06	SE	С	BP		X			$\left\{ - \right\}$	Tran	sferred from COC 2006-00321	
NO	TES: PO #: 002332 N	MSR #: 06-	0707 SSV	VP#NA		LTP QA		Radwa	ste QA		Non Q	- 1	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Z Deg. C Custody Sealed? Y D N D
	elinquished By mmE Ruante	5-1		150	2) Recei	den				117/	Time	45	D Other	Custody Seal Intact?
3) R	elinquished By		Date/Tim	e	4) Recei	ved By /				Date/	Time 		Bill of Lading # 7904-3 113-8541	Y Y N D

	tical Lab Services	CY-ISC-SO	1-001
	Figure 1. Sample Check	k-in List	
Date/Time Received:	945 5/17/06		
SDG#:	MAR# 06-070	7	• •
Work Order Number:	63105%		· ·
Shipping Container ID: 790	<u>4 3113 85 41</u> Chain o	f Custody # 2006 - 60 3 49	
1. Custody Seals on ship	oping container intact?	Yes 🕅 No [ ]	· · ·
2. Custody Seals dated a	und signed?	Yes [¥] No [ ]	
<ol> <li>Chain-of-Custody rec</li> <li>Cooler temperature</li> </ol>	ord present?	Yes [X] No [ ]	• *
5. Vermiculite/packing r	naterials is:	Wet 🕅 Dry []	-
6. Number of samples in	shipping container:	· · · · · · · · · · · · · · · · · · ·	,
7. Sample holding times	exceeded?	Yes [] No [29]	
8. Samples have: tape custody seals	hazard labels	ple labels	
9. Samples are:			
in good condition	on AM		
broken	have air bubb	bles	
· · · ·	entified in sample receipt?	Yes [ ] No [X]	المحمد
Description of anomalie	es (include sample numbers):		** * *
			·
Sample Custodian/Laboratory:	AMaly	Date: 5-17-06	
clephoned to:		By	
· .			

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#### SAMPLE RECEIPT & REVIEW FORM

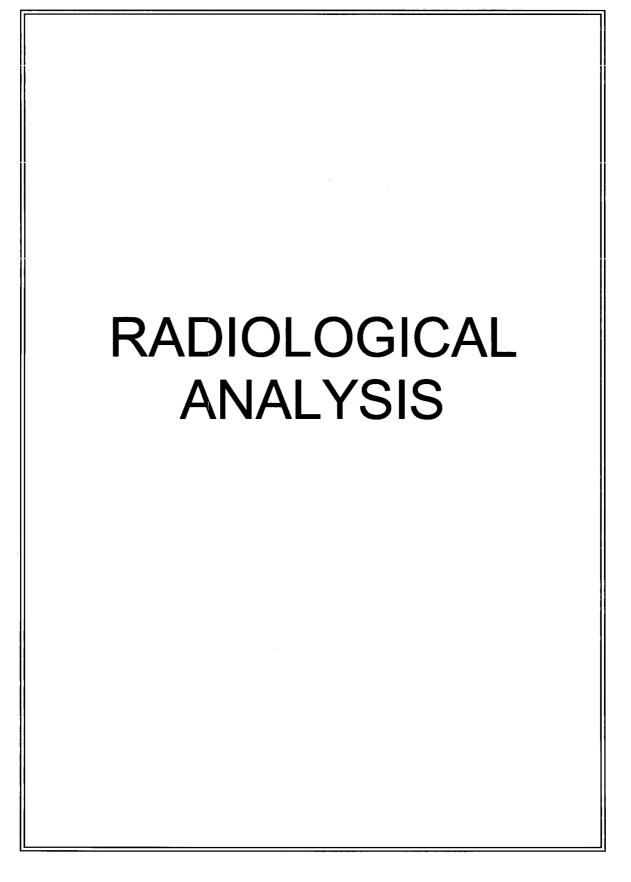
CHERYL

"ATORIE"	-		V	PM use only
Client: CONN. YANKEE				SDG/ARCOC/Work Order:
Client: CONN. YANKEE Date Received: 5-17-0	16			PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: A-LM				the
Sample Receipt Criteria	Yes	NA	R	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intac and sealed?	" /			Circle Applicable: seals broken damaged container leaking container other (describe)
Samples requiring cold 2 preservation within (4 +/- 2 C)? Record preservation method.		1		Circle Coolant # ice bags blue ice dry ice <b>Esone</b> other describe)
3 Chain of custody documents included with shipment?	1			
4 Sample containers intact and sealed?	1			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		1		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)				
8 Samples received within holding time?	~			ld's and tests affected:
9 Sample ID's on COC match ID's on bottles?	1			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	$\checkmark$			Sample ID's affected:
11 Number of containers received match number indicated on COC?	$\checkmark$			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	$\checkmark$			
14 Air Bill , Tracking #'s, & Additional Comments	7	9•9	1 -	3113 8541
Suspected Hazard Information	Non- Regulated	Regulated	gh Lev	RSO RAD Receipt #
A Radiological Classification?	P	<u> </u>		Maximum Counts Observed*: C/M 60
B PCB Regulated? Shipped as DOT Hazardous	~			Comments:
C Material? If yes, contact Waste	イ			Hazard Class Shipped:
Manager or ESH Manager.				JN#:
PM (or PMA) review of Hazard class	sification	on.		Initials Date: 5/17/14
				Dail. 9/ 1/0.0

State	Certification
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	\$-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	N/A
Virginia	00151
Washington	C223

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List of current GEL Certifications as of 15 August 2006



#### Radiochemistry Case Narrative Connecticut Yankee Atomic Power Co. (YANK) Work Order 168404

#### **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:	555696
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153129	Method Blank (MB)
1201153130	168340011(9304-01-005C) Sample Duplicate (DUP)
1201153131	168340011(9304-01-005C) Matrix Spike (MS)
1201153132	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: 168340011 (9304-01-005C).

#### **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 168404003 (9106-0003-004F) 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.

#### 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.

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:	557837
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Sample ID	Client ID
168404009	9106-0006-005F
168404010	9106-0008-006F
1201158316	Method Blank (MB)
1201158317	168404009(9106-0006-005F) Sample Duplicate (DUP)
1201158318	168404009(9106-0006-005F) Matrix Spike (MS)
1201158319	Laboratory Control Sample (LCS)

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: 168404009 (9106-0006-005F).

#### **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.

#### **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.

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:	555697
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Client ID
9106-0002-007F
9106-0002-011F
9106-0003-004F
9106-0003-015F
9106-0004-005F
9106-0004-015F
9106-0005-010F
9106-0005-014F
9106-0006-005F
9106-0008-006F
9106-0008-008F
9106-0009-002F
9106-0009-017F
9106-0010-001F
9106-0010-012F
Method Blank (MB)
168340011(9304-01-005C) Sample Duplicate (DUP)
168340011(9304-01-005C) Matrix Spike (MS)
Laboratory Control Sample (LCS)

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: 168340011 (9304-01-005C).

#### **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.

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:	555698
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153137	Method Blank (MB)
1201153138	168340011(9304-01-005C) Sample Duplicate (DUP)
1201153139	168340011(9304-01-005C) Matrix Spike (MS)
1201153140	Laboratory Control Sample (LCS)

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: 168340011 (9304-01-005C).

#### **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.

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:	556350
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Sample ID	Client ID
168404003	9106-0003-004F
168404004	9106-0003-015F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201154644	Method Blank (MB)
1201154645	168404003(9106-0003-004F) Sample Duplicate (DUP)
1201154646	168404003(9106-0003-004F) Matrix Spike (MS)
1201154647	Laboratory Control Sample (LCS)

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: 168404003 (9106-0003-004F).

#### **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**

Samples 1201154644 (MB), 1201154645 (9106-0003-004F), 1201154646 (9106-0003-004F), 1201154647 (LCS), 168404003 (9106-0003-004F), 168404004 (9106-0003-015F), 168404012 (9106-0009-002F), 168404013 (9106-0009-017F), 168404014 (9106-0010-001F) and 168404015 (9106-0010-012F) were dried and reweighed due to low matrix spike/laboratory control sample recovery.

#### **Qualifier information**

Manual qualifiers were not required.

Product:	Liquid Scint Tc99, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	554580

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201150561	Method Blank (MB)
1201150562	168340012(9304-02-003C) Sample Duplicate (DUP)
1201150563	168340012(9304-02-003C) Matrix Spike (MS)
1201150564	Laboratory Control Sample (LCS)

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).

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#### **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: 168340012 (9304-02-003C).

#### **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.

Product:	Liquid Scint Fe55, Solid-ALL FSS
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:	555722
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153222	Method Blank (MB)
1201153223	168340012(9304-02-003C) Sample Duplicate (DUP)
1201153224	168340012(9304-02-003C) Matrix Spike (MS)
1201153225	Laboratory Control Sample (LCS)

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: 168340012 (9304-02-003C).

#### **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.

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:	555723
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
1201153226	Method Blank (MB)
1201153227	168340012(9304-02-003C) Sample Duplicate (DUP)
1201153228	168340012(9304-02-003C) Matrix Spike (MS)
1201153229	Laboratory Control Sample (LCS)

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: 168340012 (9304-02-003C).

#### **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.

Product:	LSC, Tritium Dist, Solid-HTD2,ALL FSS
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	554582

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201150569	Method Blank (MB)
1201150570	168340011(9304-01-005C) Sample Duplicate (DUP)
1201150571	168340011(9304-01-005C) Matrix Spike (MS)
1201150572	Laboratory Control Sample (LCS)

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: 168340011 (9304-01-005C).

#### **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 168404010 (9106-0008-006F) 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.

#### **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:	554583

Sample ID	Client ID
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201150573	Method Blank (MB)
1201150574	168404003(9106-0003-004F) Sample Duplicate (DUP)
1201150575	168404003(9106-0003-004F) Matrix Spike (MS)
1201150576	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: 168404003 (9106-0003-004F).

#### **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.

#### **Certification Statement**

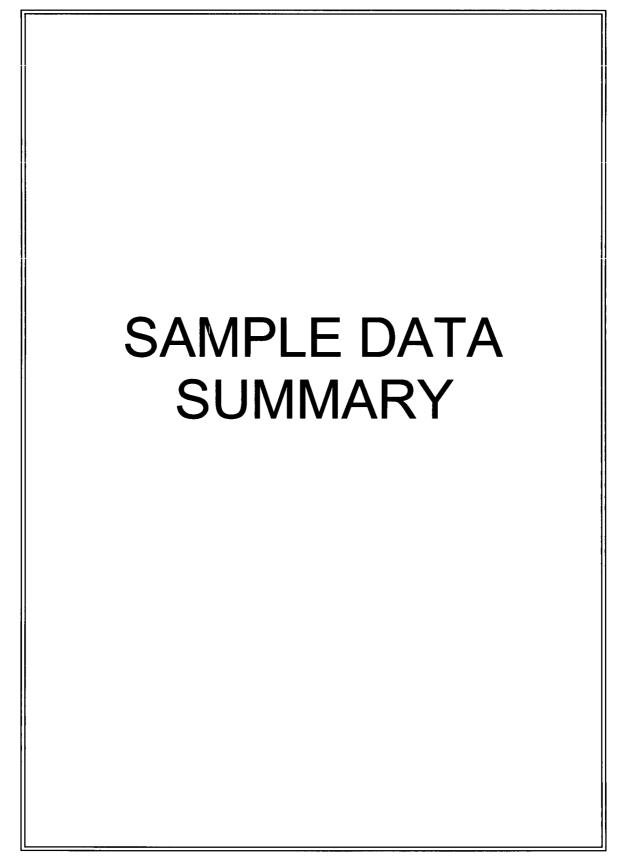
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

#### **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:

-<sup>81</sup>226 Bellet Reviewer/Date:\_\_\_\_



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: 168404 GEL Work Order: 168404

#### 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.

hell

Reviewed by

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### **Certificate of Analysis**

1 2	Connecticut 362 Injun H		tomic Power							
Contact: 1	East Hampto Mr. Jack Mo Soils PO# 0	cCarthy	ticut 06424				Reŗ	Report Date: August 21, 2006		
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	): ite:		9106 00 1684040 SE 18 MA 02 JUN Client 20.9%	Y 06			/ANK01204 /ANK001		
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch M	
Rad Alpha Spec Analysis										
Alphaspec Am241, Cm, So	olid ALL FS	S								
Americium 241	U	0.0762	+/ 0.102	0.00	+/ 0.102	0.0956	pCi/g	BXL1 08/11/0	6 1336 555696	
Curium 242	U	0.00	+/ 0.0995		+/ 0.0995	0.138	pCi/g			
Curium 243/244	U	0.00853	+/ 0.0717	0.0405	+/ 0.0717	0.177	pCi/g			
Alphaspec Pu, Solid ALL										
Plutonium 238	U	0.199	+/ 0.228	0.181	+/ 0.229	0.444	pCi/g	BXL1 08/11/0	06 1633 555697	
Plutonium 239/240	U	0.0341	+/ 0.129	0.120	+/ 0.129	0.323	pCi/g			
Liquid Scint Pu241, Solid		10.0	11000	6.09	11 ( 72	10.7	-0:/-	DVI 1 00/16/	6 1220 555609	
Plutonium 241 Rad Liquid Scintillation A	U	10.0	+/ 6.64	5.08	+/ 6.72	10.7	pCi/g	BALI 08/16/0	06 1220 555698	
-	-	ECC								
LSC, Tritium Dist, Solid Tritium	HID2,ALL U	4.17	+/ 6.67	5.28	+/ 6.67	11.4	pCi/g	DEA1 08/00/	)6 1128 554582	
Liquid Scint C14, Solid A	-	7.17	17 0.07	5.20	17 0.07	11.4	pci/g	DIAI 08/09/0	0 1128 334382	
Carbon 14	u,r 55 U	0.0813	+/ 0.0797	0.0634	+/ 0.0797	0.132	pCi/g	ATH2 08/00/(	06 0324 554583	
Liquid Scint Fe55, Solid	-	0.0015	0.0777	0.0054	17 0.0797	0.152	peng	A1112 00/07/0	00024 004000	
Iron 55	ALL F 55 U	9.90	+/ 48.1	32.0	+/ 48.1	65.9	pCi/g	MXP1 08/12/0	6 1633 555722	
Liquid Scint Ni63, Solid	-	2.20	77 40.1	52.0	17 40.1	05.7	peng	WEXT 1 00/12/0	0 1055 555722	
Nickel 63	ALL F35 U	7.02	+/ 6.39	5.18	+/ 6.40	10.6	pCi/g	MXP1_08/11/0	06 0738 555723	
Liquid Scint Tc99, Solid	-	7.02	17 0.59	5.10	17 0.40	10.0	peng	WIXI I 00/11/0	00138 555125	
Technetium 99	U U	0.139	+/ 0.213	0.173	+/ 0.213	0.360	pCi/g	EGD1 08/11/0	06 2027 554580	
The following Prep Meth	ods were p	erformed								
Method Descrip					Analyst	Date	e Time	Prep Batch	· · · · · · · · · · · · · · · · · · ·	
•					•					

Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649
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

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### **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	eticut 06424					Report Date: August 21,	, 2006
		Client Sam Sample ID			9106 0002 168404001			Project: Client ID: Vol. Recv.	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
5	EPA	EERF C 01 M	lodified							
6	DOE	RESL Fe 1, N	Aodified							

7 DOE RESL Ni 1, Modified

#### 8 DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	80	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	100	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	98	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	75	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	76	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	74	(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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier Х
- 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 : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				A	Report Date: August 21,	, 2006
		Client Sam Sample ID Matrix: Collect Dat Receive Da Collector: Moisture:	te:		9106 00 1684040 SE 19 MA 02 JUN Client 17.4%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
Rad Alpha S	Spec Analysis	5								
1 1		Solid ALL FSS								
Americiu		U	0.120	+/ 0.154	0.0683	+/ 0.155	0.251	pCi/g	BXL1 08/11/0	06 1336 555696 1
Curium 2		U	0.0146	+/ 0.122	0.0692	+/ 0.123	0.303	pCi/g		
Curium 2		· U	0.0103	+/ 0.0861	0.0487	+/ 0.0862	0.213	pCi/g		
	Pu, Solid Al		0.0101	14 0 105	0.107		0.244	0.1	DVI 1 00/11/	06 1600 555600 0
Plutonium Plutonium		U U	0.0121 0.0254	+/ 0.125 +/ 0.0675	0.127	+/ 0.125 +/ 0.0675	0.344 0.167	pCi/g	BXL1 08/11/0	06 1633 555697 2
		•	0.0234	+/ 0.0673	0.0581	+/ 0.0075	0.107	pCi/g		
Plutonium	1t Pu241, Soli	a ALL FSS U	6.72	+/ 7.02	5.56	+/ 7.05	11.7	nCi/a	DVI 1 00/16/	06 1237 555698 3
Rad Liquid		•	0.72	17 7.02	5.50	77 7.03	11.7	pCi/g	DAL1 00/10/	001237 333098 3
-		HTD2,ALL	FSS							
Tritium	in 19151, 5011u	U	0.521	+/ 7.03	5.94	+/ 7.03	12.8	pCi/g	DFA1 08/09/	06 1143 554582 4
Liauid Scir	nt C14, Solid .	All.FSS						1-8		
Carbon 1		U	0.023	+/ 0.0828	0.0685	+/ 0.0828	0.143	pCi/g	ATH2 08/09/	06 0426 554583 5
Liquid Scir	nt Fe55, Solid	ALL FSS						1 0		
Iron 55	····, ····	U	3.93	+/ 47.7	31.9	+/ 47.7	65.7	pCi/g	MXP1 08/12/	06 1649 555722 6
Liquid Scir	nt Ni63, Solid	ALL FSS								
Nickel 63	3	U	7.52	+/ 5.81	4.68	+/ 5.81	9.60	pCi/g	MXP1 08/11/	06 0825 555723 7
Liquid Scir	nt Tc99, Solid	ALL FSS								
Technetiu		U	0.173	+/ 0.203	0.164	+/ 0.203	0.341	pCi/g	EGD1 08/11/	06 2043 554580 8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649

# 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

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### **Certificate of Analysis**

Parameter		Qualifier Result Uncertainty	LC T	'PU MDA	Units	DF Analyst Date	Time Batch Mtd		
		Client Sample ID: Sample ID:	9106 0002 0 168404002	)11F	Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
	Project:	Soils PO# 002332							
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy			Report Date: August 21, 2006				
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd							

6 DOE RESL Fe 1, Modified 7 DOE RESL Ni 1, Modified

<sup>8</sup> DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	76	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	100	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	88	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	72	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	76	(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 a dry weight basis.

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# **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power							
Contact: Project:	East Hampte Mr. Jack Me Soils PO# 0	cCarthy	eticut 06424				Report Date: August 21, 2006			
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	); ite:		9106 00 1684040 SE 25 APF 05 MA Client 23.5%	K 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001		
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst D	Date Time Batch	Mtd
Rad Alpha Spec Analysis										
Alphaspec Am241, Cm, X Americium 241 Curium 242 Curium 243/244	Solid ALL FS U U U	S 0.027 0.112 0.0217	+/ 0.117 +/ 0.315 +/ 0.206	0.153 0.245 0.205	+/ 0.117 +/ 0.315 +/ 0.206	0.488 0.781 0.594	pCi/g pCi/g pCi/g	BXL1 08	8/13/06 0819 555696	1
<i>Alphaspec Pu, Solid AL</i> Plutonium 238 Plutonium 239/240	L FSS U U	0.061 0.0551	+/ 0.189 +/ 0.103	0.176 0.0584	+/ 0.189 +/ 0.103	0.449 0.215	pCi/g pCi/g	BXL1 08	8/11/06 1633 555697	2
Liquid Scint Pu241, Soli Plutonium 241 Rad Gas Flow Proportion	U	8.31	+/ 5.73	4.40	+/ 5.78	9.25	pCi/g	BXL1 08	8/16/06 1253 555698	3
GFPC, Sr90, solid ALL Strontium 90 Rad Liquid Scintillation	. FSS U	0.00343	+/ 0.0203	0.0172	+/ 0.0203	0.036	pCi/g	BXF1 08	8/14/06 0834 556350	4
LSC, Tritium Dist, Solid Tritium Liquid Scint C14, Solid J	<i>HTD2,ALL</i> U	FSS 0.603	+/ 8.25	6.87	+/ 8.25	14.8	pCi/g	DFA1 08	8/09/06 1159 554582	5
Carbon 14	U	0.0937	+/ 0.0813	0.0642	+/ 0.0813	0.134	pCi/g	ATH2 08	8/09/06 0529 554583	6
Liquid Scint Fe55, Solid Iron 55 Liquid Scint Ni63, Solid	U	7.68	+/ 51.2	34.2	+/ 51.2	70.4	pCi/g	MXP1 08	8/12/06 1706 555722	. 7
Nickel 63	U	5.74	+/ 7.12	6.58	+/ 7.13	13.6	pCi/g	MXP1 08	8/11/06 0912 555723	8
<i>Liquid Scint Tc99, Solid</i> Technetium 99	ALL FSS U	0.0643	+/ 0.198	0.169	+/ 0.198	0.351	pCi/g	EGD1 08	8/11/06 2059 554580	9

The following Prep Methods were performed									
Method	Description	Analyst	Date	Time	Prep Batch				
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649				

The following	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								

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# **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun H		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	ticut 06424				Ro	eport Date: August 21,	2006
		Client San Sample ID			9106 000 16840400		Clie	iect: ent ID: . Recv.:	YANK01204 YANK001	
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 9	05.0 Modifie	d							
5	EPA 9	06.0 Modifie	d							
6	EPA I	EERF C 01 M	lodified							
7	DOE	RESL Fe 1, N	Modified							
8	DOE	RESL Ni 1, N	Modified							
9	DOE	EML HASL	300, Tc 02	2 RC Modified						
Surrogate/	Tracer recov	ery Test				Recovery%	Accepta	ble Limit	s	
Americium	243	Alph	aspec Am2	241, Cm, Solid A	<b>ALL</b>	42	(15%	125%)		
Plutonium 2	242	Alph	aspec Pu, S	Solid ALL FSS		92	(15%	125%)		
Carrier/Trac	er Recovery	Liqu	id Scint Pu	241, Solid ALI	LFS	113	(25%	125%)		
Carrier/Trac	er Recovery	GFP	C, Sr90, so	lid ALL FSS		59	(25%	125%)		

71

83

76

(15% 125%)

(25% 125%)

(15% 125%)

Notes:

Carrier/Tracer Recovery

Carrier/Tracer Recovery

Carrier/Tracer Recovery

The Qualifiers in this report are defined as follows :

A quality control analyte recovery is outside of specified acceptance criteria

Liquid Scint Fe55, Solid ALL FS

Liquid Scint Ni63, Solid ALL FS

Liquid Scint Tc99, Solid ALL FS

- < Result is less than value reported
- > Result is greater than value reported
- The TIC is a suspected aldol condensation product Α
- Target analyte was detected in the associated blank в
- 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
- Analytical holding time was exceeded Η
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- Sample results are rejected R
- Analyte was analyzed for, but not detected above the MDL, MDA, or LOD. U
- UI Gamma Spectroscopy Uncertain identification
- Х 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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# **Certificate of Analysis**

	Company : Address :	Connecticut Yanl 362 Injun Hollow		omic Power								
	Contact: Project:	East Hampton, C Mr. Jack McCarth Soils PO# 00233	thy	icut 06424				Report Date: August 21, 2006				
		Client Sample Sample ID:	ID:		9106 0003 004F 168404003			Project: YANK01204 Client ID: YANK001 Vol. Recv.:				
Parameter		Qualifier Re	esult	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		

The above sample is reported on a dry weight basis.

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# **Certificate of Analysis**

	Connecticut 362 Injun Ho		tomic Power							
Contact:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424			Report Date: August 21, 2006				
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 25 APR 05 MA Client 22.5%	C 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001		
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	<b>Fime Batch Mtd</b>	
Rad Alpha Spec Analysis										
Alphaspec Am241, Cm, S Americium 241 Curium 242 Curium 243/244	Solid ALL FS: U U U	S 0.0456 0.113 0.180	+/ 0.155 +/ 0.181 +/ 0.239	0.139 0.0733 0.181	+/ 0.155 +/ 0.182 +/ 0.240	0.387 0.321 0.472	pCi/g pCi/g pCi/g	BXL1 08/11/06	1434 555696 1	
Alphaspec Pu, Solid AL	-	0.100	11 0.239	0.101	.7 0.210	0.172	pens			
Plutonium 238 Plutonium 239/240	U U	0.0196 0.0326	+/ 0.121 +/ 0.0639	0.118 0.00	+/ 0.121 +/ 0.064	0.324 0.0884	pCi/g pCi/g	BXL1 08/11/06	1633 555697 2	
Liquid Scint Pu241, Solid Plutonium 241 Rad Gas Flow Proportion	U	6.63	+/ 6.19	4.86	+/ 6.22	10.2	pCi/g	BXL1 08/16/06	1309 555698 3	
GFPC, Sr90, solid ALL Strontium 90 Rad Liquid Scintillation A	U	0.00477	+/ 0.0216	0.0179	+/ 0.0216	0.0375	pCi/g	BXF1 08/14/06	0834 556350 4	
LSC, Tritium Dist, Solid Tritium	HTD2,ALL	FSS 1.03	+/ 7.06	5.85	+/ 7.06	12.6	pCi/g	DFA1 08/09/06	1215 554582 5	
Liquid Scint C14, Solid A Carbon 14	1 <i>11,FSS</i>	0.156	+/ 0.0912	0.0699	+/ 0.0913	0.146	pCi/g	ATH2 08/09/06	0632 554583 6	
Liquid Scint Fe55, Solid Iron 55	U	9.99	+/ 42.7	28.7	+/ 42.7	59.2	pCi/g	MXP1 08/12/06	1722 555722 7	
<i>Liquid Scint Ni63, Solid</i> Nickel 63	ALL FSS U	0.939	+/ 10.1	10.3	+/ 10.1	21.6	pCi/g	MXP1 08/11/06	1001 555723 8	
<i>Liquid Scint Tc99, Solid</i> Technetium 99	ALL FSS U	0.237	+/ 0.213	0.170	+/ 0.213	0.353	pCi/g	EGD1 08/11/06	2115 554580 9	

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649

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								

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# **Certificate of Analysis**

		Connecticut 362 Injun He		tomic Power								
	Contact:	East Hampto Mr. Jack Mc Soils PO# 0	Carthy	ticut 06424			Report Date: August 21, 2006					
		Client Sample ID: Sample ID:			9106 000 16840400			Project: Client ID: Vol. Recv.:				
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		
3	DOE E	ML HASL	300, Pu 1	RC Modified								
4	EPA 90	5.0 Modifie	d									
5	EPA 90	6.0 Modifie	d									
6	EPA E	ERFC 01 M	lodified									
7	DOE R	ESL Fe 1, N	Modified									
8	DOE R	ESL Ni 1, N	Modified									
9	DOE E	ML HASL	300, Tc 02	2 RC Modified								
Surrogate/	Tracer recove	ry Test				Recovery%	Ac	ceptable Limi	ts			
Americium	243	Alph	aspec Am2	241, Cm, Solid A	ALL	78		(15% 125%)				
Plutonium	242	Alph	aspec Pu, S	Solid ALL FSS		94		(15% 125%)				
Carrier/Trac	cer Recovery	Liqu	id Scint Pu	241, Solid ALI	LFS	101		(25% 125%)				

Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	101	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	58	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	75	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	62	(25% 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
- The TIC is a suspected aldol condensation product Α
- 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
- Н 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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier Х
- 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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# **Certificate of Analysis**

	Contact: Project:	Mr. Jack McCarthy Soils PO# 002332			•						
		Client Sample ID Sample ID:	:	9106 000 16840400			Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier Resu	t Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		

The above sample is reported on a dry weight basis.

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# **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun He		tomic Power						
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				F	Report Date: August 21,	2006
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 03 MA 12 MA Client 15.4%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
Rad Alpha Spec Analysi	s								
Alphaspec Am241, Cm,	Solid ALL FS	5							
Americium 241	U	0.036	+/ 0.123	0.157	+/ 0.123	0.437	pCi/g	BXL1 08/11/0	06 1434 555696 1
Curium 242 Curium 243/244	U U	0.0169 0.0129	+/ 0.033 +/ 0.227	0.080 0.247	+/ 0.0331 +/ 0.227	0.350 0.619	pCi/g pCi/g		
	-	0.0129	+/ 0.227	0.247	+/ 0.227	0.019	pCi/g		
Alphaspec Pu, Solid Al Plutonium 238	U rss	0.0217	+/ 0.163	0.181	+/ 0.163	0.444	pCi/g	BYI1 08/11/0	06 1633 555697 2
Plutonium 239/240	U	0.0217	+/ 0.0791		+/ 0.0795	0.337	pCi/g	BALL 00/11/0	0 1055 555097 2
Liquid Scint Pu241, Sol	-					0.000	P8		
Plutonium 241	U	9.52	+/ 6.00	4.57	+/ 6.07	9.61	pCi/g	BXL1 08/16/0	6 1326 555698 3
<b>Rad Liquid Scintillation</b>	Analysis								
LSC, Tritium Dist, Solia	HTD2,ALL	FSS							
Tritium	U	0.854	+/ 5.88	4.87	+/ 5.88	10.5	pCi/g	DFA1 08/09/0	6 1231 554582 4
Liquid Scint C14, Solid	All,FSS								
Carbon 14		0.347	+/ 0.097	0.0674	+/ 0.0972	0.141	pCi/g	ATH2 08/09/0	06 0734 554583 5
Liquid Scint Fe55, Solia									
Iron 55	U	1.57	+/ 46.0	30.7	+/ 46.0	63.2	pCi/g	MXP1 08/12/0	06 1738 555722 6
Liquid Scint Ni63, Solid		( 20		- 40			<i></i>		
Nickel 63	U	6.39	+/ 7.62	7.40	+/ 7.62	15.5	pCi/g	MXPI 08/11/0	06 1017 555723 7
Liquid Scint Tc99, Solid Technetium 99		0.0109	1/ 0 197	0.154	1/ 0 197	0 224		ECD1 09/11/0	A 2121 554590 0
recnnetium 99	U	0.0198	+/ 0.187	0.156	+/ 0.187	0.324	pCi/g	EGD1 08/11/0	06 2131 554580 8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649

# 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

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# **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power								
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	cticut 06424				Report Date: August 21, 2006				
	Client Sample ID: Sample ID:		168404005 Client II			Project: Client ID: Vol. Recv.	D: YANK001					
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		
6		RESL Fe 1, N										

7 DOE RESL Ni 1, Modified 8 DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	65	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	95	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	105	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	78	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	80	(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
- The TIC is a suspected aldol condensation product А
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- Analyte has been confirmed by GC/MS analysis С
- D Results are reported from a diluted aliquot of the sample
- Н 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

- Analyte was analyzed for, but not detected above the MDL, MDA, or LOD. U
- UI Gamma Spectroscopy Uncertain identification
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier Х
- Y QC Samples were not spiked with this compound
- Λ RPD of sample and duplicate evaluated using +/ RL. Concentrations are <5X the RL
- Preparation or preservation holding time was exceeded h

The above sample is reported on a dry weight basis.

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# **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun Ho		tomic Power								
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				Report Date: August 21, 2006				
	Client Sam Sample ID Matrix: Collect Dai Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 03 MA 12 MA Client 26.5%	Y 06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date T	ime Batch	Mtd
Rad Alpha Spec Analysis	5		· · ·							**	
Alphaspec Am241, Cm,											
Americium 241 Curium 242	U	0.0823	+/ 0.203	0.178	+/ 0.203	0.469	pCi/g	BXL1	08/11/06 1	434 555696	<b>i</b> 1
Curium 242 Curium 243/244	U U	0.0154 0.0994	+/ 0.0301 +/ 0.251	0.0729	+/ 0.0302 +/ 0.251	0.319 0.713	pCi/g pCi/g				
Alphaspec Pu, Solid Al	-	0.0774	., 0.251	0.500	17 0.251	0.715	polig				
Plutonium 238	U	0.0466	+/ 0.213	0.210	+/ 0.213	0.521	pCi/g	BXL1	08/11/06 1	633 555697	/ 2
Plutonium 239/240	U	0.142	+/ 0.108	0.191	+/ 0.109	0.483	pCi/g				
Liquid Scint Pu241, Soli											
Plutonium 241	U	6.64	+/ 6.53	5.16	+/ 6.57	10.8	pCi/g	BXL1	08/16/06 1	342 555698	3
Rad Liquid Scintillation	•	FOO									
LSC, Tritium Dist, Solid Tritium	HIDZ,ALL I U	rss 2.9	+/ 7.59	6.60	+/ 7.59	14.2	pCi/g	DFA1	08/00/06 1	247 554582	) A
Liquid Scint C14, Solid	-	2.7	(1 1.5)	0.00	1 1.55	17.2	peng	DIM	00/07/00 1	247 554502	
Carbon 14	U	0.0352	+/ 0.0868	0.0713	+/ 0.0868	0.149	pCi/g	ATH2	08/09/06 0	837 554583	35
Liquid Scint Fe55, Solid	ALL FSS										
Iron 55	U	1.88	+/ 46.8	31.3	+/ 46.8	64.4	pCi/g	MXP1	08/12/06 1	754 555722	26
Liquid Scint Ni63, Solid	ALL FSS										
Nickel 63	U	3.88	+/ 7.46	7.40	+/ 7.46	15.5	pCi/g	MXP1	08/11/06 1	033 555723	\$ 7
Liquid Scint Tc99, Solid		0.000.4		0.1/2		0.000	<u></u>	5051	00/11/07 0	1 48 55 4500	<b>.</b> .
Technetium 99	U	0.0894	+/ 0.198	0.163	+/ 0.198	0.338	pCi/g	EGD1	08/11/06 2	147 554580	) 8

The following	g Prep Methods were performed	
Mathod	Description	

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649

#### 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

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# **Certificate of Analysis**

6	DOE	RESL Fe 1, N	Modified									
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		
		Client Sample ID: Sample ID:			9106 0004 015F 168404006			Project: YANK01204 Client ID: YANK001 Vol. Recv.:				
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				Report Date: August 21, 2006				
	Company : Address :	Connecticut 362 Injun He		tomic Power								

7 DOE RESL Ni 1, Modified

<sup>8</sup> DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	72	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	72	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	94	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	73	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	80	(25% 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
- The TIC is a suspected aldol condensation product Α
- Target analyte was detected in the associated blank в
- BD Results are either below the MDC or tracer recovery is low
- Analyte has been confirmed by GC/MS analysis С
- D Results are reported from a diluted aliquot of the sample
- Η Analytical holding time was exceeded
- I 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
- Х 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
- Preparation or preservation holding time was exceeded h

The above sample is reported on a dry weight basis.

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### **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power								
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				R	Report Date: August 21, 2006			
		Client Sam Sample ID Matrix: Collect Dat Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 02 MA 09 MA Client 56.2%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		
Rad Alpha Sp	ec Analysis	5							an to a second a second s			
Alphaspec A	m241, Cm,	Solid ALL FSS	5									
Americium		U	0.128	+/ 0.0939		+/ 0.0942	0.385	pCi/g	BXL1 08/11/0	6 1434 555696 1		
Curium 24		U	0.0115	+/ 0.128	0.147	+/ 0.128	0.450	pCi/g				
Curium 24		U	0.0333	+/ 0.122	0.149	+/ 0.122	0.401	pCi/g				
Alphaspec P			0.0540		0.150							
Plutonium Plutonium		UU	0.0548 0.0195	+/ 0.169	0.158 0.117	+/ 0.170	0.403	pCi/g	BXL1 08/11/0	6 1633 555697 2		
		-	0.0195	+/ 0.121	0.117	+/ 0.121	0.322	pCi/g				
Liquid Scint Plutonium		id ALL FSS U	10.4	+/ 6.89	5.27	1/ ( 07	11.1	-0:1-	DVI 1 00/16/0	6 1358 555698 3		
Rad Liquid S		-	10.4	+/ 0.89	5.27	+/ 6.97	11.1	pCi/g	DALI 08/10/0	5 560555 5520		
-		HTD2,ALL	FSS									
Tritium	<i>i Dist,</i> Donu	U U	0.00	+/ 6.86	5.76	+/ 6.86	12.4	pCi/g	DFA1 08/09/0	6 1303 554582 4		
Liquid Scint	C14 Solid	-	0.00	., 0.00	5.,0	., 0.00	12.1	Pere	21111 00/07/0	0 1505 55 1502		
Carbon 14	017,0014	U	0.0636	+/ 0.0801	0.0644	+/ 0.0801	0.135	pCi/g	ATH2 08/09/0	6 1017 554583 5		
Liquid Scint	Fe55, Solid	ALLESS						F 8				
Iron 55	,	U	36.1	+/ 44.1	28.7	+/ 44.1	59.0	pCi/g	MXP1 08/12/0	6 1811 555722 6		
Liquid Scint	Ni63. Solid	ALL ESS						r · · · · ·				
Nickel 63	,	U	7.26	+/ 10.2	10.0	+/ 10.2	20.9	pCi/g	MXP1 08/11/0	6 1049 555723 7		
Liquid Scint	Tc99. Solid	ALL FSS						. 0				
Technetium		U	0.05	+/ 0.199	0.169	+/ 0.199	0.351	pCi/g	EGD1 08/11/0	6 2203 554580 8		
								. 0				

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649

#### The following Analytical Methods were performed Method Description

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

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### **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power							
Contact: Project:	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				Report Date: August 21, 2006			2006
		Client Sam Sample ID			9106 0003 168404007			Project: Client ID: Vol. Recv.	YANK	C01204 C001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst Date	Time Batch Mtd
6	DOE	RESL Fe 1, N	Aodified								
7	DOE	RESL Ni 1. N	Andified								

7 DOE RESL Ni 1, Modified 8 DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	85	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	91	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	92	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	81	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	64	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	77	(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
- Η 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
- Х Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- $^{\sim}$ 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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### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power						
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	Carthy	ticut 06424				R	eport Date: August	21, 2006
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	te:		9106 00 1684040 SE 02 MA 09 MA Client 32.3%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Da	te Time Batch Mtd
Rad Alpha Spec Analysis									
Alphaspec Am241, Cm, S	Solid ALL FS	S							
Americium 241	U	0.00591	+/ 0.219	0.231	+/ 0.219	0.608	pCi/g	BXL1 08/	11/06 1434 555696 1
Curium 242	U	0.04	+/ 0.0554		+/ 0.0557	0.494	pCi/g		
Curium 243/244	U	0.0634	+/ 0.261	0.249	+/ 0.261	0.646	pCi/g		
Alphaspec Pu, Solid AL		0.0704		0.1.60			<b>C</b> . (		
Plutonium 238	U U	0.0694	+/ 0.106	0.160	+/ 0.106	0.434	pCi/g	BXLI 08/	11/06 1633 555697 2
Plutonium 239/240	-	0.0287	+/ 0.098	0.127	+/ 0.0981	0.369	pCi/g		
Liquid Scint Pu241, Solid Plutonium 241	a ALL FSS U	4.68	+/ 8.01	6.48	+/ 8.02	13.6	-Ci/a	DVI 1 00/	16/06 1415 555698 3
Rad Liquid Scintillation	-	4.08	+/ 8.01	0.48	+/ 8.02	13.0	pCi/g	BALI 08/	10/00 1415 555098 5
LSC, Tritium Dist, Solid	•	FSS							
Tritium	U U	6.02	+/ 6.38	4.90	+/ 6.38	10.6	pCi/g	DFA1 08/	09/06 1319 554582 4
Liquid Scint C14, Solid A	-	0.02			., 0.20	1010	P0.8		
Carbon 14	U	0.0892	+/ 0.0827	0.0655	+/ 0.0827	0.137	pCi/g	ATH2 08/	09/06 1424 554583 5
Liquid Scint Fe55, Solid	ALL ESS		,				r 6		
Iron 55	U	19.8	+/ 46.3	30.6	+/ 46.3	62.9	pCi/g	MXP1 08/	12/06 1827 555722 6
Liquid Scint Ni63, Solid	ALL FSS								
Nickel 63	U	5.41	+/ 7.91	7.77	+/ 7.91	16.2	pCi/g	MXP1 08/	11/06 1106 555723 7
Liquid Scint Tc99, Solid	ALL FSS								
Technetium 99	U	0.134	+/ 0.192	0.167	+/ 0.192	0.346	pCi/g	EGD1 08/	11/06 2218 554580 8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch	
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649	

#### The following Analytical Methods were performed Method Description

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

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#### **Certificate of Analysis**

	Client Sam Sample ID:			9106 0005 168404008			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	 Oualifier	Result	Uncertaintv	LC	TPU	MDA		DF Analyst Date	Time Batch Mtd

- 6 DOE RESL Fe 1, Modified 7 DOE RESL Ni 1, Modified
- 8 DOE EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	50	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	61	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	74	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	76	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	76	(25% 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
- h Preparation or preservation holding time was exceeded

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### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power						
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 0	Carthy	eticut 06424				R	Report Date: August 21,	2006
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	te:		9106 00 1684040 SE 28 APF 12 MA Client 16.5%	C 06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
Rad Alpha Spec Analysis	1								
Alphaspec Am241, Cm, S	Solid ALL FS	S							
Americium 241	U	0.0851	+/ 0.136	0.106	+/ 0.136	0.390	pCi/g	BXL1 08/16/0	06 0949 557837 1
Curium 242	U	0.0253	+/ 0.0495		+/ 0.0496	0.525	pCi/g		
Curium 243/244	U	0.0479	+/ 0.0542	0.131	+/ 0.0545	0.443	pCi/g		
Alphaspec Pu, Solid AL		0.0102		0 1 1 0	. / 0.112	0.202	·· C: /-		
Plutonium 238 Plutonium 239/240	U U	0.0183 0.00122	+/ 0.113 +/ 0.0662	0.110	+/ 0.113 +/ 0.0662	0.303 0.221	pCi/g	BXL1 08/11/0	06 1633 555697 3
	-	0.00122	+/ 0.0002	0.0094	+/ 0.0002	0.221	pCi/g		
Liquid Scint Pu241, Soli Plutonium 241	a ALL FSS	4.43	+/ 5.83	4.67	+/ 5.85	9.82	pCi/g	DVI 1 08/16/0	6 1431 555698 4
Rad Liquid Scintillation	•	4.43	7/ 5.65	4.07	7/ 5.85	9.02	pC//g	BAL1 00/10/0	0 1451 555098 4
LSC, Tritium Dist, Solid	-	FSS							
Tritium	U U	2.02	+/ 6.67	5.76	+/ 6.67	12.4	pCi/g	DFA1 08/09/0	6 1335 554582 5
Liquid Scint C14, Solid A	-	2.02	.,,	0170			P0B		
Carbon 14	111,1 00	0.142	+/ 0.0798	0.061	+/ 0.0799	0.127	pCi/g	ATH2 08/09/0	6 1719 554583 6
Liquid Scint Fe55, Solid	ALL ESS						F 8		
Iron 55	U	12.6	+/ 47.6	31.7	+/ 47.6	65.3	pCi/g	MXP1 08/12/0	06 1843 555722 7
							1 0		
Liquid Scint Ni63, Solid	ALL FSS								
Liquid Scint Ni63, Solid Nickel 63	ALL FSS U	7.70	+/ 9.56	9.31	+/ 9.56	19.5	pCi/g	MXP1 08/11/0	06 1122 555723 8
A	U	7.70	+/ 9.56	9.31	+/ 9.56	19.5	pCi/g	MXP1 08/11/0	06 1122 555723 8

The following	Prep Methods were performed					
Method	Description	Analyst	Date	Time	Prep Batch	
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649	
The following A	Analytical Methods were performed		I			
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					

4

5 EPA 906.0 Modified

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### **Certificate of Analysis**

Parameter		Qualifier Result Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd	
		Client Sample ID: Sample ID:	9106 0006 168404009	005F		Project: Client ID: Vol. Recv.:	YANK01204 YANK001		
H	Project:	Soils PO# 002332							
(	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy				Report Date: August 21, 2006			
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd							

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	<b>Recovery%</b>	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	76	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	93	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	105	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	72	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid ALL FS	64	(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
- 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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### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun He		tomic Power								
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				F	Report Date: Aug	ust 21, 2006		
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 05 MA 26 MA Client 34.8%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	Date Time	Batch Mt	td
Rad Alpha Spec Analysis	5										_
Alphaspec Am241, Cm,	Solid ALL FS	5									
Americium 241	U	0.129	+/ 0.195	0.0758	+/ 0.196	0.332	pCi/g	BXL1 (	08/16/06 0949	557837	1
Curium 242	U	0.103	+/ 0.202	0.00	+/ 0.203	0.280	pCi/g				
Curium 243/244	U	0.0161	+/ 0.0316	0.0766	+/ 0.0317	0.335	pCi/g				
Alphaspec Pu, Solid Al											
Plutonium 238	U	0.0276	+/ 0.0711		+/ 0.0712	0.275	pCi/g	BXL1 (	08/11/06 1633	555697	3
Plutonium 239/240	U	0.00359	+/ 0.113	0.118	+/ 0.113	0.317	pCi/g				
Liquid Scint Pu241, Soli	id ALL FSS										
Plutonium 241		14.9	+/ 6.37	4.64	+/ 6.51	9.75	pCi/g	BXL1 (	08/16/06 1447	555698	4
Rad Liquid Scintillation	•										
LSC, Tritium Dist, Solid				<b>5</b> 00		10.7	<b>C</b> ''	DEA1 (	0.110/06 01 60	664690	-
Tritium	U	0.00	+/ 6.06	5.09	+/ 6.06	10.7	pCi/g	DFA1 (	08/10/06 2150	554582	5
Liquid Scint C14, Solid											
Carbon 14	U	0.107	+/ 0.0846	0.0664	+/ 0.0846	0.139	pCi/g	ATH2 (	08/09/06 1822	554583	6
Liquid Scint Fe55, Solid	ALL FSS										
Iron 55	U	15.1	+/ 41.4	27.5	+/ 41.4	56.6	pCi/g	MXP1 (	08/12/06 1900	555722	7
Liquid Scint Tc99, Solid	ALL FSS										
Technetium 99	U	0.258	+/ 0.225	0.179	+/ 0.225	0.373	pCi/g	EGD1 (	08/11/06 2251	554580	8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649

#### The following Analytical Methods were performed Method Description

Description
DOE EML HASL 300, Am 05 RC Modified
DOE EML HASL 300, Am 05 RC Modified
DOE EML HASL 300, Pu 11 RC Modified
DOE EML HASL 300, Pu 11 RC Modified
EPA 906.0 Modified
EPA EERF C 01 Modified
DOE RESL Fe 1, Modified

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### **Certificate of Analysis**

Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
		Client Sam Sample ID			9106 0008 168404010			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
	ntact: ject:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	eticut 06424				J	Report Date: August 21,	2006
	npany : dress :	Connecticut 362 Injun Ho		tomic Power						

#### DOE EML HASL 300, Tc 02 RC Modified

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4. · D

Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	77	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	94	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	103	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	72	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	71	(15% 125%)

Notes:

8

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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#### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun Ho		tomic Power									
Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				Я	eport Date: Au	gust 21, 2	2006		
	Client Sam Sample ID Matrix: Collect Dat Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 08 MA 26 MA Client 35.7%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	Date	Time	Batch 1	Mtd
Rad Alpha Spec Analysi	s											
Alphaspec Am241, Cm,	Solid ALL FS	S										
Americium 241	U	0.0969	+/ 0.192	0.152	+/ 0.193	0.426	pCi/g	BXL1	08/11/06	5 1434	555696	1
Curium 242	U	0.0482	+/ 0.142	0.132		0.446	pCi/g					
Curium 243/244	U	0.0576	+/ 0.202	0.240	+/ 0.203	0.603	pCi/g					
Alphaspec Pu, Solid A	LL FSS											
Plutonium 238	U	0.0397	+/ 0.096	0.125	+/ 0.096	0.328	pCi/g	BXL1	08/11/06	5 1633	555697	2
Plutonium 239/240	U	0.0315	+/ 0.114	0.137	+/ 0.114	0.353	pCi/g					
Liquid Scint Pu241, Sol	id ALL FSS											
Plutonium 241		11.5	+/ 6.72	5.08	+/ 6.80	10.7	pCi/g	BXL1	08/16/06	5 1 5 0 4	555698	3
Rad Liquid Scintillation	Analysis											
LSC, Tritium Dist, Solid	t HTD2,ALL											
Tritium	U	0.00	+/ 5.92	4.97	+/ 5.92	10.7	pCi/g	DFA1	08/09/06	5 1407	554582	4
Liquid Scint C14, Solid	All,FSS											
Carbon 14	U	0.0238	+/ 0.0745	0.0636	+/ 0.0745	0.133	pCi/g	ATH2	08/09/06	5 1924	554583	5
Liquid Scint Fe55, Solid	a ALL FSS											
Iron 55	U	10.7	+/ 40.9	27.5	+/ 40.9	56.8	pCi/g	MXP1	08/12/06	5 1916	555722	6
Liquid Scint Tc99, Solia	ALL FSS											
Technetium 99	U	0.0956	+/ 0.211	0.174	+/ 0.211	0.361	pCi/g	EGDI	08/11/06	5 2207	554580	7

The following Prep Methods were performed									
Method	Description	Analyst	Date	Time	Prep Batch				
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649				

# The following Analytical Methods were performedMethodDescription

	<b>r</b>
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

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### **Certificate of Analysis**

Parameter		Qualifier Result Uncertain	ty LC TPU	U MDA Units DF Analyst Date Time Batch Mtd
		Client Sample ID: Sample ID:	9106 0008 008 168404011	8F Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Contact: Project:	East Hampton, Connecticut 06424 Mr. Jack McCarthy Soils PO# 002332		Report Date: August 21, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

#### DOE EML HASL 300, Tc 02 RC Modified

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Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits
Americium 243	Alphaspec Am241, Cm, Solid ALL	65	(15% 125%)
Plutonium 242	Alphaspec Pu, Solid ALL FSS	98	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	96	(25% 125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	76	(15% 125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	74	(15% 125%)

Notes:

7

The Qualifiers in this report are defined as follows :

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- 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

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### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power						
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	cCarthy	ticut 06424				R	Report Date: August 21,	2006
	Client Sam Sample ID Matrix: Collect Da Receive D Collector: Moisture:	); ite:		9106 00 1684040 SE 11 MA 08 JUN Client 33%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MĎA	Units	DF Analyst Date	Time Batch Mtd
Rad Alpha Spec Analys	is								······································
Alphaspec Am241, Cm,	Solid ALL FS	S							
Americium 241	U	0.00144	+/ 0.155	0.166	+/ 0.155	0.458	pCi/g	BXL1 08/11/	06 1434 555696 1
Curium 242	U	0.0192	+/ 0.145	0.135	+/ 0.145	0.455	pCi/g		
Curium 243/244	U	0.013	+/ 0.268	0.281	+/ 0.268	0.687	pCi/g		
Alphaspec Pu, Solid A									
Plutonium 238	U	0.00587	+/ 0.0493		+/ 0.0494	0.122	pCi/g	BXL1 08/11/	06 1632 555697 2
Plutonium 239/240	U	0.0186	+/ 0.0492	0.0278	+/ 0.0493	0.122	pCi/g		
Liquid Scint Pu241, So	lid ALL FSS								
Plutonium 241		13.6	+/ 6.90	5.13	+/ 7.01	10.8	pCi/g	BXL1 08/16/	06 1520 555698 3
Rad Gas Flow Proporti	onal Counting	5							
GFPC, Sr90, solid AL									
Strontium 90	U	0.0151	+/ 0.0146	0.0114	+/ 0.0146	0.0242	pCi/g	BXF1 08/14/	06 0834 556350 4
Rad Liquid Scintillation	•								
LSC, Tritium Dist, Soli									
Tritium	U	4.12	+/ 8.36	6.70	+/ 8.36	14.5	pCi/g	DFA1 08/09/	06 1422 554582 5
Liquid Scint C14, Solia	l All,FSS								
Carbon 14	U	0.046	+/ 0.0755	0.0613	+/ 0.0755	0.128	pCi/g	ATH2 08/09/	06 2027 554583 6
Liquid Scint Fe55, Soli	d ALL FSS								
Iron 55	U	12.9	+/ 40.6	26.8	+/ 40.6	55.2	pCi/g	MXP1 08/12/	06 1932 555722 7
Liquid Scint Tc99, Soli	d ALL FSS								
Technetium 99	U	0.078	+/ 0.203	0.168	+/ 0.203	0.348	pCi/g	EGD1 08/11/	06 2323 554580 8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649
The following	Analytical Methods were performed				
Method	Description				
1	DOE EML HASL 300, Am 05 RC Modified				

1	DUE 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 Modifie	ed		

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### **Certificate of Analysis**

	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd						
	Contact: Project:	East Hampton, Connecticut 06424 Mr. Jack McCarthy Soils PO# 002332	Report Date: August 21, 2006					2006
		Client Sample ID: Sample ID:	9106 0009 168404012			Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
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 EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	61	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	98	(15% 125%)	,
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	94	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	69	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	81	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	75	(15% 125%)	

#### Notes:

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- 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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### **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power								
	East Hampton, Connecticut 06424 Contact: Mr. Jack McCarthy Project: Soils PO# 002332							Report Date: August 21, 2006				
		Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	: te:		9106 00 1684040 SE 15 MA 08 JUN Client 28.4%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		
Rad Alpha S	Spec Analysis	S										
Alphaspec	Am241, Cm,	Solid ALL FS	5									
Americiur	m 241	U	0.0755	+/ 0.242	0.230	+/ 0.243	0.574	pCi/g	BXL1 08/11/06	1434 555696 1		
Curium 2		U	0.0957	+/ 0.220	0.171	+/ 0.220	0.509	pCi/g				
Curium 2	243/244	U	0.073	+/ 0.214	0.256	+/ 0.214	0.627	pCi/g				
A A	Pu, Solid Al	LL FSS										
Plutonium		U	0.00629	+/ 0.0529		+/ 0.0529	0.131	pCi/g	BXL1 08/11/06	1632 555697 2		
Plutonium	n 239/240	U	0.0262	+/ 0.0513	0.00	+/ 0.0514	0.0709	pCi/g				
	nt Pu241, Soli	id ALL FSS										
Plutonium			13.3	+/ 6.66	4.95	+/ 6.77	10.4	pCi/g	BXL1 08/16/06	1536 555698 3		
Rad Gas Flo	ow Proportio	nal Counting	5									
	90, solid ALL											
Strontium		U	0.0205	+/ 0.0151	0.0116	+/ 0.0151	0.0246	pCi/g	BXF1 08/14/06	0833 556350 4		
-	Scintillation	-										
	ım Dist, Solid	HTD2,ALL										
Tritium		U	0.583	+/ 7.98	6.65	+/ 7.98	14.4	pCi/g	DFA1 08/09/06	5 1438 554582 5		
-	nt C14, Solid	All,FSS										
Carbon 1	4	U	0.0271	+/ 0.0759	0.0625	+/ 0.0759	0.131	pCi/g	ATH2 08/09/06	5 2129 554583 6		
Liquid Scir	nt Fe55, Solia	ALL FSS										
Iron 55		U	61.9	+/ 150	102	+/ 150	210	pCi/g	MXP1 08/12/06	5 1949 555722 7		
Liquid Scir	nt Tc99, Solid	ALL FSS										
<b>m</b> 1	ım 99	U	0.0628	+/ 0.200	0.165	+/ 0.200	0.343	pCi/g	ECD1 00/11/0/	2338 554580 8		

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649
<u>The following</u>	Analytical Methods were performed				
Method	Description				
1	DOE EML HASL 300, Am 05 RC Modified				

1	l	DOE	EML	HASL	300,	Am	05	RC	Modif	iec
2	2	DOE	EML	HASL	300,	Pu	11	RC M	lodifie	d
	3	DOE	EML	HASL	300,	Pu	11	RC M	lodifie	:d
2	1	EPA 9	905.0	Modifie	ed					

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### **Certificate of Analysis**

Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		
Contact: Project:	East Hampton, Connecticut 06424 Mr. Jack McCarthy Soils PO# 002332		Report Date: August 21, 2006
	Client Sample ID: Sample ID:	9106 0009 017F 168404013	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 EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	64	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	91	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	96	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	72	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	73	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid ALL FS	79	(15% 125%)	

#### Notes:

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- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
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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

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### **Certificate of Analysis**

Company : Address :	Connecticut 362 Injun H		tomic Power		r.						
Contact: Project:	•				Report Date: August 21, 2					;	
	Client Sam Sample ID Matrix: Collect Da Receive Da Collector: Moisture:	): ite:		9106 00 1684040 SE 04 MA 17 MA Client 27.3%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	Date Tin	ne Batch 1	Mtd
Rad Alpha Spec Analysi	s										
Alphaspec Am241, Cm,	Solid ALL FS	S									
Americium 241	U	0.00677	+/ 0.227	0.238	+/ 0.227	0.628	pCi/g	BXL1	08/11/06 143	34 555696	1
Curium 242	U	0.0854	+/ 0.167	0.00	+/ 0.168	0.231	pCi/g				
Curium 243/244	U	0.0361	+/ 0.242	0.241	+/ 0.242	0.634	pCi/g				
Alphaspec Pu, Solid Al											
Plutonium 238	U	0.173	+/ 0.181	0.143	+/ 0.182	0.331	pCi/g	BXL1	08/11/06 22:	50 555697	2
Plutonium 239/240	U	0.0342	+/ 0.0865	0.0951	+/ 0.0866	0.235	pCi/g				
Liquid Scint Pu241, Sol	id ALL FSS										
Plutonium 241		13.0	+/ 6.44	4.78	+/ 6.54	10.0	pCi/g	BXL1	08/16/06 15:	53 555698	3
Rad Gas Flow Proportio	nal Counting	3									
GFPC, Sr90, solid ALI											
Strontium 90	U	0.0128	+/ 0.0141	0.0125	+/ 0.0141	0.0262	pCi/g	BXF1	08/14/06 08:	33 556350	4
Rad Liquid Scintillation											
LSC, Tritium Dist, Solia	HTD2,ALL	FSS									
Tritium	U	0.548	+/ 7.50	6.25	+/ 7.50	13.5	pCi/g	DFA1	08/09/06 14:	54 554582	5
Liquid Scint C14, Solid	All,FSS										
Carbon 14	U	0.0555	+/ 0.0809	0.0655	+/ 0.0809	0.137	pCi/g	ATH2	08/09/06 223	32 554583	6
Liquid Scint Fe55, Solia	I ALL FSS										
Iron 55	U	18.1	+/ 47.6	32.3	+/ 47.6	66.6	pCi/g	MXP1	08/12/06 200	05 555722	7
Liquid Scint Tc99, Solid	ALL FSS										
Technetium 99	U	0.134	+/ 0.205	0.167	+/ 0.205	0.347	pCi/g	EGD1	08/11/06 23:	54 554580	8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649
The following A	Analytical Methods were performed				
Method	Description				
1	DOE EML HASL 300, Am 05 RC Modified				

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 Modifie	ed	

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### **Certificate of Analysis**

Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		
Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: August 21, 2006
Project:	Soils PO# 002332		· · · · · · · · · · · · · · · · · · ·
	Client Sample ID: Sample ID:	9106 0010 001F 168404014	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 EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	50	(15% 125%)	·
Plutonium 242	Alphaspec Pu, Solid ALL FSS	85	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	99	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	74	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	70	(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
- h Preparation or preservation holding time was exceeded

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### **Certificate of Analysis**

	Company : Address :	Connecticut 362 Injun Ho		tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	Carthy	ticut 06424				F	Report Date: August 2	1, 2006
		Client Sam Sample ID Matrix: Collect Dat Receive Da Collector: Moisture:	te:		9106 00 1684040 SE 04 MA 17 MA Client 28.1%	Y 06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	e Time Batch Mtd
Rad Alpha S	Spec Analysis	š								
Alphaspec	Am241, Cm,	Solid ALL FSS	S							
Americiu		U	0.110	+/ 0.184	0.140		0.386	pCi/g	BXL1 08/11	1/06 1434 555696 1
Curium 2		U	0.0547	+/ 0.141	0.192	+/ 0.141	0.544	pCi/g		
Curium 2	243/244	U	0.126	+/ 0.184	0.245	+/ 0.185	0.597	pCi/g		
	Pu, Solid Al									
Plutonium		U	0.00157	+/ 0.126	0.122		0.291	pCi/g	BXL1 08/11	1/06 2250 555697 2
	n 239/240	U	0.0867	+/ 0.0869	0.0406	+/ 0.0872	0.128	pCi/g		
	nt Pu241, Soli	d ALL FSS								
Plutonium		U	8.31	+/ 6.16	4.77	+/ 6.21	10.0	pCi/g	BXL1 08/16	5/06 1609 555698 3
Rad Gas Flo	ow Proportio	nal Counting	{							
GFPC, SrS	90, solid ALL									
Strontium		-	0.00771	+/ 0.0144	0.0124	+/ 0.0144	0.0263	pCi/g	BXF1 08/14	4/06 0833 556350 4
Rad Liquid	Scintillation	Analysis								
LSC, Tritiu	ım Dist, Solid	HTD2,ALL	FSS							
Tritium		U	0.896	+/ 6.17	5.11	+/ 6.17	11.0	pCi/g	DFA1 08/09	9/06 1510 554582 5
Liquid Scir	nt C14, Solid	All,FSS								
Carbon 1	4	U	0.0162	+/ 0.0763	0.0633	+/ 0.0763	0.132	pCi/g	ATH2 08/09	9/06 2334 554583 6
Liquid Scir	nt Fe55, Solid	ALL FSS								
Iron 55		U	23.3	+/ 49.3	32.5	+/ 49.3	67.0	pCi/g	MXP1 08/12	2/06 2021 555722 7
Liquid Scir	nt Tc99, Solid	ALL FSS						-		
	um 99	U	0.0577	+/ 0.206	0.171	+/ 0.206	0.354	pCi/g	ECD1 00/1/	2/06 0010 554580 8

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch	
Dry Soil Prep	Dry Soil Prep GL RAD A 021	LXM2	08/03/06	1534	554649	
The following	Analytical Methods were performed					
Method	Description					
1	DOE EML HASL 300, Am 05 RC Modified					

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 Modifie	ed	

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### **Certificate of Analysis**

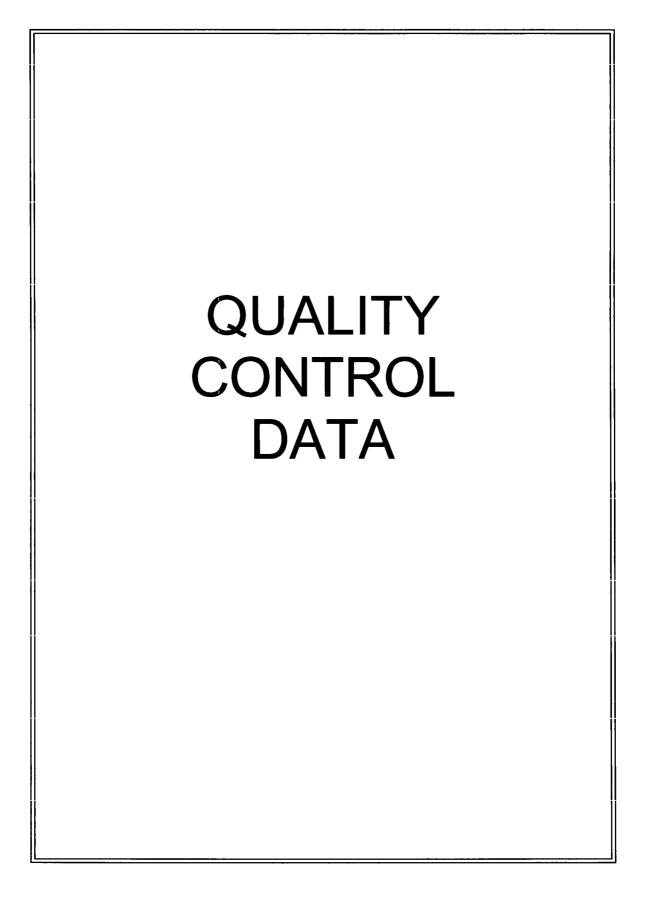
- Company : Connecticut Yankee Atomic Power Address : 362 Injun Hollow Rd East Hampton, Connecticut 06424 Report Date: August 21, 2006 Mr. Jack McCarthy Contact: Project: Soils PO# 002332 Client Sample ID: 9106 0010 012F Project: Client ID: **YANK01204** Sample ID: 168404015 YANK001 Vol. Recv.: Parameter Qualifier Result MDA Uncertainty LC TPU 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 EML HASL 300, Tc 02 RC Modified

Surrogate/Tracer recovery	Test	<b>Recovery%</b>	Acceptable Limits	
Americium 243	Alphaspec Am241, Cm, Solid ALL	81	(15% 125%)	
Plutonium 242	Alphaspec Pu, Solid ALL FSS	91	(15% 125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid ALL FS	99	(25% 125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid ALL FSS	68	(25% 125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid ALL FS	74	(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
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- 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** 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Client :	Connecticut 362 Injun H	Yankee Atomic Power ollow Rd	QC	<u>C Su</u>	<u>mmary</u>			Report D	ate: August 21, 200 Page 1 of 6	6
Contact:	East Hampt Mr. Jack M	on, Connecticut cCarthy								
Workorder:	168404									
Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Alpha Spec									E .	
Batch	555696									
QC12011531	30 168340011	DUP								
Americium-241		U	-0.000522	U	0.0578	pCi/g	g 204		(0% - 100%) BXL1	08/11/06 14:34
		Uncert:	+/-0.0385		+/-0.278					
		TPU:	+/-0.0385		+/-0.279					
Curium-242		U	0.00	U	-0.0405	pCi/g	g 200		(0% - 100%)	
		Uncert:	+/-0.0756		+/-0.0562					
		TPU:	+/-0.0756		+/-0.0565					
Curium-243/244	4	U	-0.0177	U	-0.0517	pCi/g	g 98		(0% - 100%)	
		Uncert:	+/-0.0764		+/-0.257					
		TPU:	+/-0.0765		+/-0.257					
QC12011531: Americium-241		12.8			12.8	-0:4	_	100	(75%-125%)	
Americium-241		Uncert:			+/-1.84	pCi/g	5	100	(7370-12370)	
					+/-1.84					
Curium-242		TPU:		U	-0.0328	nCi/c				
Curium-242		Uncert:		U	+/-0.0328	pCi/g	5			
		TPU:			+/-0.0434					
Curium-243/24	4	15.5				pCi/g		02	(75%-125%)	
Cullum-245/24	•	Uncert:			+/-1.94	pene	5	12	(7570-12570)	
		TPU:			+/-2.92					
QC12011531	29 MB	110.			1-2.92					
Americium-241				U	0.0471	pCi/g	2			
		Uncert:			+/-0.157		-			
		TPU:			+/-0.157					
Curium-242				U	-0.0469	pCi/g	g			
		Uncert:			+/-0.0459					
		TPU:			+/-0.0464					
Curium-243/24	4			U	-0.00385	pCi/g	3			
		Uncert:			+/-0.210					
		TPU:			+/-0.210					
•	31 168340011									
Americium-241		13.3 U			12.0	pCi/į	3	91	(75%-125%)	
		Uncert:	+/-0.0385		+/-1.38					
		TPU:	+/-0.0385		+/-2.08	_				
Curium-242		U		U	0.0427	pCi/g	3			
		Uncert:	+/-0.0756		+/-0.0837					
Curium 242/24	4	TPU:	+/-0.0756		+/-0.0839	-01	-	00	(760/ 1360/)	
Curium-243/24	4	16.1 U			15.9	pCi/į	3	99	(75%-125%)	
		Uncert:	+/-0.0764		+/-1.58					
Batch	555697	TPU:	+/-0.0765		+/-2.61					
QC12011531 Plutonium-238	34 168340011	DUP	-0.0155	U	0.0237	pCi/į	g 956		(0% - 100%) BXL	08/11/06 22:51

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### **QC Summary**

		<u>QC Summary</u>										
Workorder: 168404								Page 2 of 6				
Parmname	NOM	Sample (	Qual	QC	Units F	RPD%	REC%	Range Anlst	Date Time			
Rad Alpha SpecBatch555697												
	Uncert:	+/-0.0215		+/-0.0465								
	TPU:	+/-0.0216		+/-0.0466								
Plutonium-239/240	U	0.0414	U	-0.0489	pCi/g	2410		(0% - 100%)				
	Uncert:	+/-0.0934		+/-0.124								
	TPU:	+/-0.0935		+/-0.124								
QC1201153136 LCS				0.155	- 0:1-			(750/ 1250/)				
Plutonium-238	T la a ante		U	0.155 +/-0.141	pCi/g			(75%-125%)				
	Uncert:			+/-0.141								
Plutonium-239/240	TPU: 11.8			+/-0.142	pCi/g		98	(75%-125%)				
Flutomum-239/240	Uncert:			+/-0.856	peng		70	(7370-12370)				
	TPU:			+/-1.32								
QC1201153133 MB	IFU.			17-1.52								
Plutonium-238			U	0.0552	pCi/g				08/11/06 22:50			
	Uncert:			+/-0.186	1 0							
	TPU:			+/-0.186								
Plutonium-239/240			U	-0.0978	pCi/g							
	Uncert:			+/-0.0892								
	TPU:			+/-0.0899								
QC1201153135 168340011 MS												
Plutonium-238	U	-0.0155	U	0.0539	pCi/g			(75%-125%)	08/11/06 22:51			
	Uncert:	+/-0.0215		+/-0.112								
D1	TPU:	+/-0.0216		+/-0.112	<b>C</b> ''			(550/ 1050/)				
Plutonium-239/240	12.3 U	0.0414		10.3	pCi/g		84	(75%-125%)				
	Uncert:	+/-0.0934		+/-0.796								
Batch 555698	TPU:	+/-0.0935		+/-1.19								
QC1201153138 168340011 DUP		2.00		10.1	0.1	0		(00/ 1000/) D3/I 1	00/16/06 16 41			
Plutonium-241	U	7.28	U	10.1	pCi/g	0		(0% - 100%) BXL1	08/10/06 10:41			
	Uncert:	+/-6.30		+/-6.39								
QC1201153140 LCS	TPU:	+/-6.35		+/-6.46								
Plutonium-241	137			145	pCi/g		106	(75%-125%)	08/16/06 17:14			
	Uncert:			+/-12.5	P8			((0,0,120,0))	00,10,00 1111			
	TPU:			+/-19.9								
QC1201153137 MB												
Plutonium-241			U	8.57	pCi/g				08/16/06 16:25			
	Uncert:			+/-6.93								
	TPU:			+/-6.98								
QC1201153139 168340011 MS												
Plutonium-241	138 U	7.28		142	pCi/g		103	(75%-125%)	08/16/06 16:58			
	Uncert:	+/-6.30		+/-12.4								
D-4-1 687027	TPU:	+/-6.35		+/-19.7								
Batch 557837												
QC1201158317 168404009 DUP												
Americium-241	U	-0.0851	U	0.167	pCi/g	616		(0% - 100%) BXL1	08/16/06 09:49			
	Uncert:	+/-0.136		+/-0.220								
Curium 242	TPU:	+/-0.136		+/-0.221		0.17		(00/ 1000/)				
Curium-242	U	-0.0253	U	0.241	pCi/g	247		(0% - 100%)				

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### **QC Summary**

Workorder: 168404				mmary				Page 3	of 6		
Parmname	NOM	Sample (	Qual	QC	Units	RPD%	REC%	-	Anlst	Date	Time
Rad Alpha Spec			-								
Batch 557837											
	Uncert:	+/-0.0495		+/-0.334							
	TPU:	+/-0.0496		+/-0.335							
Curium-243/244	U	-0.0479	U	0.0761	pCi/g	g 879		(0% - 100%)	J		
	Uncert:	+/-0.0542		+/-0.149							
	TPU:	+/-0.0545		+/-0.149							
QC1201158319 LCS											
Americium-241	24.5			25.4	pCi/g	g	104	(75%-125%)	l.		
	Uncert:			+/-2.47							
	TPU:			+/-4.16	<u></u>						
Curium-242	**		U	0.0477	pCi/g	3					
	Uncert:			+/-0.127							
C	TPU:			+/-0.127	0.1		01	(759/ 1059/)			
Curium-243/244	29.7			27.0	pCi/g	3	91	(75%-125%)			
	Uncert:			+/-2.54							
QC1201158316 MB	TPU:			+/-4.38							
Americium-241			U	0.234	pCi/g	r					
	Uncert:		U	+/-0.275	port	>					
	TPU:			+/-0.277							
Curium-242			U	0.00	pCi/į	2					
	Uncert:		-	+/-0.152	F 6	2					
	TPU:			+/-0.152							
Curium-243/244			U	-0.0551	pCi/g	2					
	Uncert:			+/-0.0624							
	TPU:			+/-0.0628							
QC1201158318 168404009 MS											
Americium-241	26.4 U	-0.0851		29.1	pCi/g	3	110	(75%-125%)	i		
	Uncert:	+/-0.136		+/-2.97							
	TPU:	+/-0.136		+/-5.01							
Curium-242	U	-0.0253	U	0.126	pCi/į	3					
	Uncert:	+/-0.0495		+/-0.247							
	TPU:	+/-0.0496		+/-0.248							
Curium-243/244	32.4 U	-0.0479		31.7	pCi/į	3	98	(75%-125%)	)		
	Uncert:	+/-0.0542		+/-3.12							
	TPU:	+/-0.0545		+/-5.39							
Rad Gas Flow											
Batch 556350											
QC1201154645 168404003 DUP											
Strontium-90	U	-0.00343	U	-0.00637	pCi/g	g 0		(0% - 100%)	BXF1	08/14/0	6 08:33
	Uncert:	+/-0.0203		+/-0.0152							
	TPU:	+/-0.0203		+/-0.0152							
QC1201154647 LCS	1.57			1.20	0.1		0.7	(750/ 1050/)			
Strontium-90	1.56			1.30	pCi/g	5	83	(75%-125%)	1		
	Uncert:			+/-0.0563							
001201154644	TPU:			+/-0.0881							
QC1201154644 MB Strontium-90			U	0.0176	pCi/j	T.					
Saonium 70	Uncert:		U	+/-0.018	PC1/J	5					
				+/-0.018							
	TPU:			T/-U.UI8							

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## **QC Summary**

Workorder: 1	68404									Page 4 of 6	
Parmname			NOM	Sample (	)ual	QC	Units	RPD%	REC%	•	Date Time
Rad Gas Flow						<u>x</u> ~	0		10070		
	5350										
QC1201154646 Strontium-90	168404003	MS	1.58 U Uncert: TPU:	-0.00343 +/-0.0203 +/-0.0203		1.29 +/-0.0535 +/-0.0813	pCi/	g	82	(75%-125%)	
Rad Liquid Scintilla Batch 554	1 <b>tion</b> 4580										
QC1201150562	168340012	DUP									
Technetium-99			U	0.0338	U	0.266	pCi/	g 0		(0% - 100%) EGD1	08/12/06 00:42
			Uncert:	+/-0.192		+/-0.226					
			TPU:	+/-0.192		+/-0.226					
QC1201150564 Technetium-99	LCS		13.1			12.6	-C:/	~	102	(750/ 1250/)	09/12/06 01-14
Technetium-99			Uncert:			13.6 +/-0.496	pCi/	g	103	(75%-125%)	08/12/06 01:14
			TPU:			+/-0.490					
QC1201150561	МВ		IFU.			17-0.399					
Technetium-99					U	0.0311	pCi/	g			08/12/06 00:26
			Uncert:			+/-0.177	•	•			
			TPU:			+/-0.177					
QC1201150563	168340012	MS									
Technetium-99			13.0 U	0.0338		12.0	pCi/	g	92	(75%-125%)	08/12/06 00:58
			Uncert:	+/-0.192		+/-0.523					
Batch 554	4582		TPU:	+/-0.192		+/-0.602					
QC1201150570 Tritium	108340011	DUP	U	1.77	U	1.62	pCi/	g 0		(0% - 100%) DFA1	08/09/06 15:42
			Uncert:	+/-8.20		+/-7.47	Per	6 -		(0,0 100,0) 21111	00/02/00 10/12
			TPU:	+/-8.20		+/-7.47					
QC1201150572	LCS										
Tritium			68.3			76.2	pCi/	g	111	(75%-125%)	08/09/06 16:14
			Uncert:			+/-14.0					
001201160660	L/D		TPU:			+/-14.1					
QC1201150569 Tritium	MB				U	0.586	pCi/	a			08/09/06 15:26
Thum			Uncert:		U	+/-8.01	per	в			08/09/00 15.20
			TPU:			+/-8.01					
QC1201150571	168340011	MS									
Tritium			61.3 U	1.77		61.8	pCi/	g	101	(75%-125%)	08/09/06 15:58
			Uncert:	+/-8.20		+/-12.2					
D-4-1 65.	4602		TPU:	+/-8.20		+/-12.3					
	4583										
QC1201150574	168404003	DUP									
Carbon-14			U	0.0937	U	0.0422	pCi/	g 0		(0% - 100%) ATH2	08/10/06 01:39
			Uncert:	+/-0.0813		+/-0.075					
QC1201150576	LCS		TPU:	+/-0.0813		+/-0.0751					
Carbon-14	103		7.27			7.14	pCi/	g	98	(75%-125%)	08/10/06 03:00
			Uncert:			+/-0.508	P	0		(	
			TPU:			+/-0.520					
QC1201150573	MB										

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### **QC Summary**

Workorder: 168404							Page 5 of 6			
Parmname	NOM	Sample (	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time	
Rad Liquid Scintillation										
Batch 554583										
Carbon-14			U	-0.0315	pCi/	g				
	Uncert:			+/-0.0776						
	TPU:			+/-0.0776						
QC1201150575 168404003 MS		0.0005			<i></i>					
Carbon-14	15.1 U	0.0937		13.8	pCi/	g	92	(75%-125%)	08/10/06 02:43	
	Uncert: TPU:	+/-0.0813 +/-0.0813		+/-1.00 +/-1.03						
Batch 555722	190:	+/-0.0813		-7-1.03						
QC1201153223 168340012 DUP Iron-55	U	-26.5	U	5.83	pCi/j	g 0		(0% - 100%) MXP1	08/12/06 20.54	
101-35	Uncert:	+/-65.1	U	+/-36.9	pen	g U		(0/0 - 100/0) MAI 1	08/12/00 20.34	
	TPU:	+/-65.1		+/-36.9						
QC1201153225 LCS	ne.	.,		1 50.5						
Iron-55	641			660	pCi/	g	103	(75%-125%)	08/12/06 21:27	
	Uncert:			+/-56.2						
	TPU:			+/-67.2						
QC1201153222 MB			• •		<i>a</i>					
Iron-55	<b>TT</b> /		U	18.2	pCi/	g			08/12/06 20:38	
	Uncert:			+/-39.6						
QC1201153224 168340012 MS	TPU:			+/-39.6						
Iron-55	717 U	-26.5		688	pCi/g	g	96	(75%-125%)	08/12/06 21:11	
	Uncert:	+/-65.1		+/-60.2	F	6		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	TPU:	+/-65.1		+/-71.6						
Batch 555723										
QC1201153227 168340012 DUP										
Nickel-63	U	3.79	U	6.68	pCi/j	g 0		(0% - 100%) MXP1	08/11/06 11:55	
	Uncert:	+/-5.39		+/-7.43						
	TPU:	+/-5.40		+/-7.43						
QC1201153229 LCS	<b>6</b> 10				<b>C</b> 11				00/11/07 10 05	
Nickel-63	512			479	pCi/	g	94	(75%-125%)	08/11/06 12:27	
	Uncert:			+/-22.4						
QC1201153226 MB	TPU:			+/-27.1						
Nickel-63			U	15.7	pCi/j	σ			08/11/06 11:38	
	Uncert:		5	+/-9.92	POD	D			56,11,00 11,50	
	TPU:			+/-9.93						
QC1201153228 168340012 MS				'						
Nickel-63	530 U	3.79		511	pCi/	g	96	(75%-125%)	08/11/06 12:11	
	Uncert:	+/-5.39		+/-23.5						
	TPU:	+/-5.40		+/-28.7						

#### 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

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## **QC Summary**

Parmname > A The	NOM	Sample Qual					Page 6	01 6		
		Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Tim
۸ Th										
A 110	TIC is a suspected aldol-condensation pro	duct								
B Tar	get analyte was detected in the associated b	lank								
BD Res	ults are either below the MDC or tracer rec	overy is low								
C An	lyte has been confirmed by GC/MS analys	is								
D Res	ults are reported from a diluted aliquot of t	he sample								
H An	lytical holding time was exceeded									
J Val	ue is estimated									
N/A Spi	ke recovery limits do not apply. Sample co	ncentration exceeds spike	concentrat	tion by 4X	or more					
R Sar	aple results are rejected									
U An	alyte was analyzed for, but not detected abo	ve the MDL, MDA, or LO	DD.							
UI Ga	nma SpectroscopyUncertain identification	1								
X Co	nsult Case Narrative, Data Summary packag	ge, or Project Manager con	ncerning th	is qualific	r					
Y QC	Samples were not spiked with this compou	ind								
^ RP	O of sample and duplicate evaluated using	+/-RL. Concentrations are	e <5X the H	RT .						
h Pre	paration or preservation holding time was e	xceeded								

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 9106-0008

RELEASE RECORD

Attachment 2b Split Sample Assessment Forms (2 Pages)

#### Connecticut Yankee Decommissioning Project Health Physics Procedure

			Split	: San	nple A	ssessm	ient Forn	n		
Survey Area #:	9106	Survey Unit #:	1111112 1	Surve Unit 1	ey Name:	Disch	arge Cana	1		
Sample Plan	or WPIR#:	2006-021						SML #:	9106-0008-	006
-	a spectros	copy by an	off-site	ven	dor lab					<u>#03</u> and analyze 9106-0008-0061
		STANDAR	D					СС	MPARISO	N
Radionuclide	Activity Value	Standard Error	Resolut	tion	Agree Rar		Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N
Cs-137	4.92E-01	3.63E-02	14		0.6 -	1.66	6.01E-01	5.00E-02	1.22	Y
Co-60	7.79E-01	4.90E-02	16		0.75 -	1.33	1.34E+00	7.00E-02	1.72	N
Sr-90	5.59E-03	6.50E-03	1	-	NONE -		8.75E-04	7.05E-03	0.16	N/A
Ni-63	2.28E+00	5.05E+00	0		NONE		1.88E-01	3.05E+00	0.08	N/A
K-40	1.37E+01	6.85E-01	20		0.75 -	1.33	1.49E+01	7.45E-01	1.09	Y
63 results, gu	idance for a	greement rai	nges, obt	tained	d from	) & Ni-	-	provided to split sampl	-	tance criteria use
•		edure 84750, n 4, therefore					Resolution Agreement Rang			ement Range
acceptability	for such rat	ions cannot l	be made.	. Co-(	60 has a	1	4	7	0.50 0.60	2.00
likelyhood to form, one wo	-	-		-			8 16	15 50	0.80	1.66 1.33
nixed from p	processing o	f the sample	-split ali	qot.	Since C	cs-137		200	0.80	1.25
		be present at tion is warra		ptable	e levels	of		200	0.85	1.18
Performed B	y:			Date:			Reviewed	By:		Date:
0	Rend	1 //			1-31-	01	$\langle \eta \rangle$			11/1/06

SML - Sample Measurement Location designation

.

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#### Connecticut Yankee Decommissioning Project Health **Physics Procedure**

·

			Split S	Sam <sub>]</sub>	ple Ass	essme	nt Form			
Survey Area#:										
Sample Plan	or WPIR#:	2006-0021			·			SML #:	9106-0008-0	010
ising gamma	a spectrosco	nparison of s opy by an of 9106-0008-0	f-site v							
	· · ·	STANDAR	D					СОМ	PARISON	
Radionuclide	Activity Value	Standard Error	Resolu	ition	Agree Rar		Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	3.36E-01	3.45E-02	10		0.6 -	1.66	3.02E-01	2.87E-02	0.90	Y .
Co-60	2.46E-01	2.51E-02	10		0.6 -	1.66	3.28E-01	2.96E-02	1.33	Y
Sr-90	3.47E-03	6.05E-03	1		NONE		8.59E-03	8.50E-03	2.48	N/A
Ni-63	1.23E-01	2.99E+00	0		NONE		-1.63E+00	3.35E+00	-13.25	N/A
K-40	1.37E+01	6.85E-01	20		0.75	1.33	1.49E+01	7.45E-01	1.09	Y
Comments/C	orrective A	ctions: In co	nsidera	tion	of Sr-9(	) & Ni-	Table is pr	ovided to s	show accepta	ince criteria
63 results, gu	idance for a	igreement rai	nges, ob	otaine	d from		-	sess split sa	-	
•		edure 84750, n 4, therefore					Resolution Agreement Ra			ent Range
		ions cannot b					4	7	0.50	2.00
		to be present		ccept	able lev	els of	8	15	0.60	1.66
agreement, n	o further ac	tion is warrai	nted.				16	50	0.75	1.33
							51	200	0.80	1.25
							>	200	0.85	1.18
Performed B		• 10		Date	:		Reviewed	By:	I	Date:
Pal Randall 10-31-06						1 10		1/1/06		

SML - Sample Measurement Location designation

#### DISCHARGE CANAL SURVEY UNIT 9106-0008

### RELEASE RECORD

Attachment 2c Preliminary Data Form (1 Page)

#### Preliminary Data Review Form - Samples for the Sign Test

Survey Unit: 9106- 0008 Survey Unit Name: Discharge Canal

Classification:	2
Survey Media:	Soil
Type of Survey:	Final Status Survey
Type of Measurement:	Radionuclide Specific
Number of Measurements:	14
Operational DCGL:	1

#### **BASIC STATISTICAL QUANTITIES**

	Cs-137	Co-60	Sr-90	Ni-63
Minimum Value:	-8.91E-03	-1.45E-02	-1.92E-02	-4.84E+00
Maximum Value:	4.92E-01	9.17E-01	2.03E-02	2.28E+00
Mean:	1.78E-01	1.98E-01	3.34E-03	-1.38E+00
Median:	1.26E-01	7.60E-02	4.44E-03	-1.76E+00
Standard Deviation:	1.85E-01	2.95E-01	1.04E-02	1.87E+00

		RADION	UCLIDE CO	NCENTRATION (pCi/g)	
NUMBER	Cs-137	Co-60	Sr-90	Ni-63	
9106-0008-001F	3.96E-01	1.33E-01	5.79E-03	2.33E-01	
9106-0008-002F	-8.91E-03	7.77E-03	2.03E-02	-4.84E+00	
9106-0008-003F	2.05E-01	3.24E-01	1.12E-02	-2.74E+00	
9106-0008-004F	4.32E-02	0.00E+00	-6.19E-03	-1.80E+00	
9106-0008-005F	2.66E-01	2.75E-02	8.28E-04	-8.58E-01	
9106-0008-006F	4.92E-01	7.79E-01	5.59E-03	2.28E+00	
9106-0008-007F	2.29E-02	2.68E-02	-8.81E-04	-2.33E+00	
9106-0008-008F	4.72E-01	9.17E-01	-2.69E-03	-4.12E-01	
9106-0008-009F	1.55E-02	-1.08E-02	-5.90E-03	-2.05E+00	
9106-0008-010F	3.36E-01	2.46E-01	3.47E-03	1.23E-01	
9106-0008-011F	6.76E-02	1.22E-01	1.93E-02	-3.34E+00	
9106-0008-012F	1.84E-01	1.79E-01	-1.92E-02	8.39E-01	
9106-0008-013F	1.03E-02	2.99E-02	9.80E-03	-2.70E+00	
9106-0008-014F	-3.89E-03	-1.45E-02	5.40E-03	-1.72E+00	

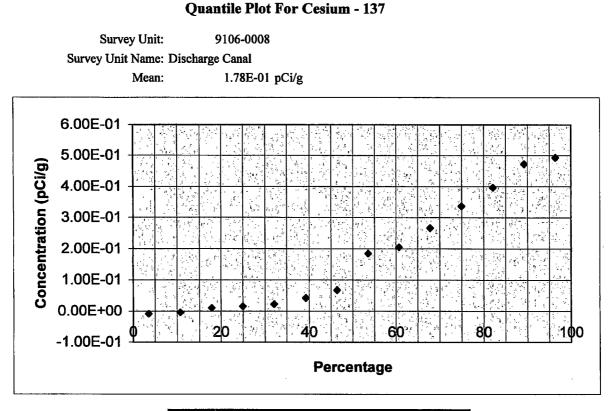
Independent Review:

Date: Date:

#### DISCHARGE CANAL SURVEY UNIT 9106-0008

RELEASE RECORD

Attachment 2d Graphical Representation of Data (8 Pages)

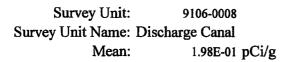


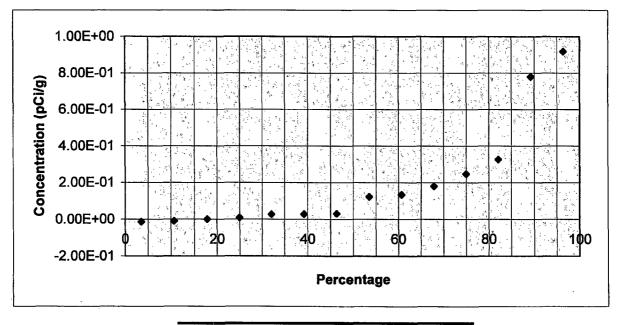
Cs-137	Rank	Percentage
-8.91E-03	1	4 %
-3.89E-03	2	11 %
1.03E-02	3	18 %
1.55E-02	4	25 %
2.29E-02	5	32 %
4.32E-02	6	39 %
6.76E-02	7	46 %
1.84E-01	8	54 %
2.05E-01	9	61 %
2.66E-01	10	68 %
3.36E-01	11	75 %
3.96E-01	12	82 %
4.72E-01	13	89 %
4.92E-01	14	96 %

Prepared By: Oal Runhall Reviewed By:

Date: <u>10-31-06</u> Date: <u>11/1/56</u>

#### **Quantile Plot For Cobalt - 60**



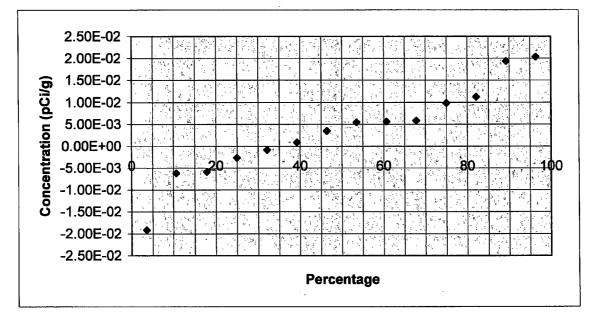


Co-60	Rank	Percentage
-1.45E-02	1	4 %
-1.08E-02	2	11 %
0.00E+00	3	18 %
7.77E-03	4	25 %
2.68E-02	5	32 %
2.75E-02	6	39 %
2.99E-02	7	46 %
1.22E-01	8	54 %
1.33E-01	9	61 %
1.79E-01	10	68 %
2.46E-01	11	75 %
3.24E-01	12	82 %
7.79E-01	13	89 %
9.17E-01	14	96 %

Prepared By: Oal Runhall Reviewed By: Reviewed By:

Date: <u>10-3/-06</u> Date: <u>11/1/06</u>

#### Survey Unit: 9106-0008 Survey Unit Name: Discharge Canal Mean: 3.34E-03 pCi/g



Sr-90	Rank	Percentage
-1.92E-02	1	4 %
-6.19E-03	2	11 %
-5.90E-03	3	18 %
-2.69E-03	4	25 %
-8.81E-04	5	32 %
8.28E-04	6	39 %
3.47E-03	7	46 %
5.40E-03	8	54 %
5.59E-03	9	61 %
5.79E-03	10	68 %
9.80E-03	11	75 %
1. <b>12E-02</b>	12	82 %
1.93E-02	13	89 %
2.03E-02	14	96 %

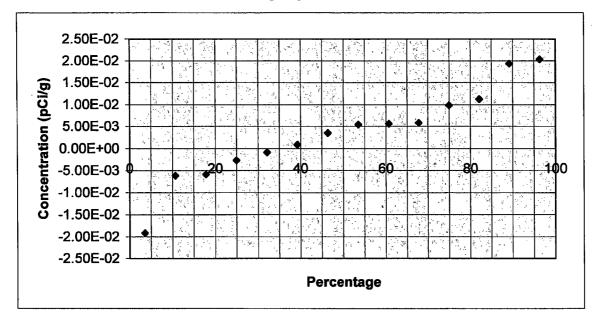
Prepared By: Out. Runhall Reviewed By:

Date: <u>10-31-06</u> Date: <u>11/1/06</u>

**Quantile Plot For Strontium - 90** 

#### **Quantile Plot For Nickel - 63**

Survey Unit: 9106-0008 Survey Unit Name: Discharge Canal Mean: -1.38E+00 pCi/g

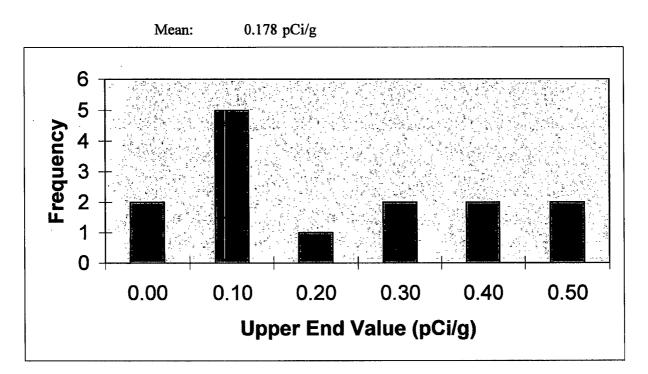


Ni-63	Rank	Percentage
-4.84E+00	1	4 %
-3.34E+00	2	11 %
-2.74E+00	3	18 %
-2.70E+00	4	25 %
-2.33E+00	5	32 %
-2.05E+00	6	39 %
-1.80E+00	7	46 %
-1.72E+00	8	54 %
-8.58E-01	9	61 %
-4.12E-01	10	68 %
1.23E-01	11	75 %
2.33E-01	12	82 %
8.39E-01	13	89 %
2.28E+00	14	96 %

Prepared By: Dal Rowland

Date: <u>10-31-06</u> Date: <u>11/1/56</u>

#### **Frequency Plot For Cesium-137**



	Upper End Value	Observation Frequency	Observation % Frequency
•	0.00	2	14%
	0.10	5	36%
	0.20	1	7%
	0.30	2	14%
	0.40	2	14%
	0.50	2	14%
	Total	14	100%

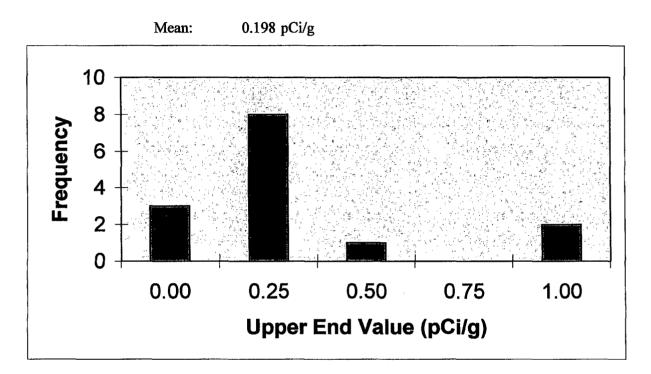
Oal Rundall Prepared By:

Date: 10-31-96

Reviewed By:

Date: 11/1/06

#### **Frequency Plot For Cobalt-60**



Upper End Value	Observation Frequency	Observation % Frequency
0.00	3	21%
0.25	8	57%
0.50	1	7%
0.75	0	0%
1.00	2	14%
Total	14	100%

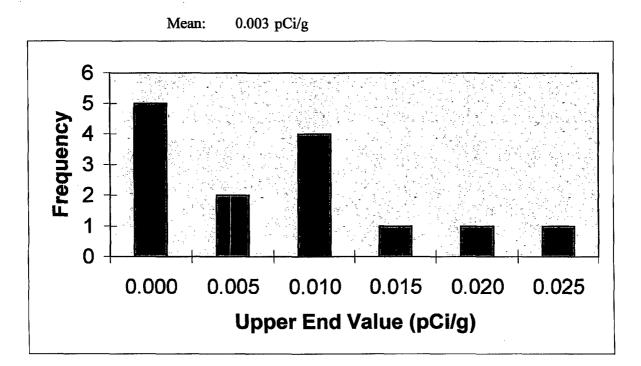
Oal Andall Prepared By:

Date: 10-31-06

Reviewed By:

Date: 11/1/06

#### **Frequency Plot For Strontium-90**



Upper End Value	Observation Frequency	Observation % Frequency	
0.000	5	36%	
0.005	2	14%	
0.010	4	29%	
0.015	1	7%	
0.020	1	7%	
0.025	1	7%	
Total	14	100%	

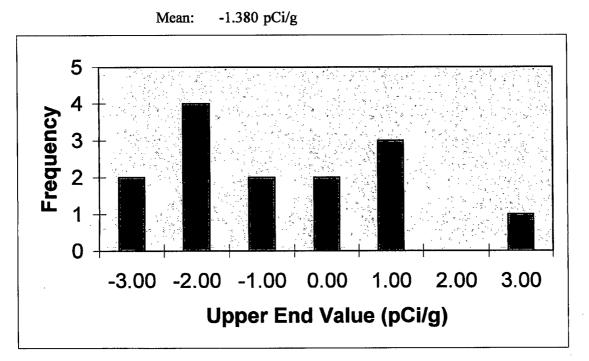
Prepared By: Och Rendall

Date: //-/-04

Reviewed By:

Date: 11/1/06

#### **Frequency Plot For Nickel-63**



	Observatio	Observation
Upper End	n	%
Value	Frequency	Frequency
-3.00	2	14%
-2.00	4	29%
-1.00	2	14%
0.00	2	14%
1.00	3	21%
2.00	0	0%
3.00	1	7%
Total	14	100%

Date: <u>//-/-06</u>

Reviewed By:

Date: 11/1/08

#### DISCHARGE CANAL SURVEY UNIT 9106-0008

RELEASE RECORD

Attachment 2e Sign Test Calculation (1 Page)

Health Physics Procedure	3PP-GGGR-R5121-000 Attachment A, Rev. CY-001 MAJOR
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#### Sign Test Calculation Sheet For Multiple Radionuclisdes

Discharge Canal	······				
2006-021			<del></del>		
2	<b>ΤΥΡΕ Ι (α e</b>	error):0.05	ΤΥΡΕΙ(β	error):0.05	
Radionuclides:	Cs-137	Co-60	Sr-90	Ni-63	
DCGL (pCi/g):	6.01	2.9	1.18	549	
Results Co-60	Results Sr-90	Results Ni-63	Weighted Sum (W <sub>s</sub> )	DCGL-Result	Sign
1.33E-01	1.33E-01	1.33E-01	1.17E-01	8.83E-01	1
7.77E-03	7.77E-03	7.77E-03	1.84E-02	9.82E-01	1
3.24E-01	3.24E-01	3.24E-01	1.55E-01	8.45E-01	1
0.00E+00	0.00E+00	0.00E+00	1.94E-03	9.98E-01	1
2.75E-02	2.75E-02	2.75E-02	5.44E-02	9.46E-01	1
7.79E-01	7.79E-01	7.79E-01	3.55E-01	6.45E-01	1
2.68E-02	2.68E-02	2.68E-02	1.23E-02	9.88E-01	1
9.17E-01	9.17E-01	9.17E-01	3.92E-01	6.08E-01	1
-1.08E-02	-1.08E-02	-1.08E-02	-6.15E-03	1.00E+00	1
2.46E-01	2.46E-01	2.46E-01	1.44E-01	8.56E-01	1
1.22E-01	1.22E-01	1.22E-01	6.97E-02	9.30E-01	1
1.79E-01	1.79E-01	1.79E-01	7.61E-02	9.24E-01	1
2.99E-02	2.99E-02	2.99E-02	2.03E-02	9.80E-01	1
-1.45E-02	-1.45E-02	-1.45E-02	-1.07E-03	1.00E+00	1
Number of Positi	ve Differences (S+):	14			
11	Survey Unit:	Meets Accept	ance Criterion	-	
	2006-021 2 Radionuclides: DCGL (pCi/g): Results Co-60 1.33E-01 7.77E-03 3.24E-01 0.00E+00 2.75E-02 7.79E-01 2.68E-02 9.17E-01 -1.08E-02 2.46E-01 1.22E-01 1.79E-01 2.99E-02 -1.45E-02 Number of Positi	2006-021         2       TYPE I (α e         Radionuclides:       Cs-137         DCGL (pCi/g):       6.01         Results Co-60       Results Sr-90         1.33E-01       1.33E-01         7.77E-03       7.77E-03         3.24E-01       3.24E-01         0.00E+00       0.00E+00         2.75E-02       2.75E-02         7.79E-01       7.79E-01         2.68E-02       2.68E-02         9.17E-01       9.17E-01         -1.08E-02       -1.08E-02         2.46E-01       2.46E-01         1.22E-01       1.22E-01         1.79E-01       2.99E-02         -1.45E-02       -1.45E-02	2006-021           2         TYPE I (α error):0.05           Radionuclides:         Cs-137         Co-60           a DCGL (pCi/g):         6.01         2.9           Results Co-60         Results Sr-90         Results Ni-63           1.33E-01         1.33E-01         1.33E-01           7.77E-03         7.77E-03         7.77E-03           3.24E-01         3.24E-01         3.24E-01           0.00E+00         0.00E+00         0.00E+00           2.75E-02         2.75E-02         2.75E-02           7.79E-01         7.79E-01         7.79E-01           2.68E-02         2.68E-02         2.68E-02           9.17E-01         9.17E-01         9.17E-01           -1.08E-02         -1.08E-02         -1.08E-02           2.46E-01         2.46E-01         2.46E-01           1.22E-01         1.22E-01         1.22E-01           1.79E-01         1.79E-01         1.79E-01           2.99E-02         2.99E-02         2.99E-02           -1.45E-02         -1.45E-02         -1.45E-02	2006-021           2         TYPE I (α error):0.05         TYPE I (β error):0.05           Radionuclides:         Cs-137         Co-60         Sr-90           n DCGL (pCi/g):         6.01         2.9         1.18           Results Co-60         Results Sr-90         Results Ni-63         Weighted Sum (W <sub>2</sub> )           1.33E-01         1.33E-01         1.33E-01         1.17E-01           7.77E-03         7.77E-03         7.77E-03         1.84E-02           3.24E-01         3.24E-01         3.24E-01         1.55E-01           0.00E+00         0.00E+00         0.00E+00         1.94E-03           2.75E-02         2.75E-02         5.44E-02           7.79E-01         7.79E-01         3.55E-01           2.68E-02         2.68E-02         1.23E-02           9.17E-01         9.17E-01         9.17E-01           9.17E-01         9.17E-01         9.17E-01           1.08E-02         -1.08E-02         -6.15E-03           2.46E-01         2.46E-01         2.46E-01         1.44E-01           1.22E-01         1.22E-01         1.79E-01         7.61E-02           2.99E-02         2.99E-02         2.03E-02         -1.07E-03           1.45E-02         -1	2006-021           2         TYPE I (α error):0.05         TYPE I (β error):0.05           Radionuclides:         Cs-137         Co-60         Sr-90         Ni-63           DCGL (pCi/g):         6.01         2.9         1.18         549           Results Co-60         Results Sr-90         Results Ni-63         Weighted Sum (W <sub>θ</sub> )         DCGL-Result           1.33E-01         1.33E-01         1.33E-01         1.17E-01         8.83E-01           7.77E-03         7.77E-03         1.84E-02         9.82E-01           3.24E-01         3.24E-01         3.24E-01         1.55E-01         8.45E-01           0.00E+00         0.00E+00         1.94E-03         9.98E-01         2.75E-02         2.75E-02         5.44E-02         9.48E-01           2.68E-02         2.68E-02         2.68E-02         1.26E-01         6.45E-01         2.46E-01           9.17E-01         9.17E-01         9.17E-01         3.92E-01         6.08E-01         -1.08E-02         -6.15E-03         1.00E+00           2.46E-01         2.46E-01         1.44E-01         8.56E-01         1.22E-01         1.22E-01         1.22E-01         2.99E-02         2.99E-02         9.30E-01           1.79E-01         1.79E-01         1.79E-01

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#### DISCHARGE CANAL SURVEY UNIT 9106-0008

**RELEASE RECORD** 

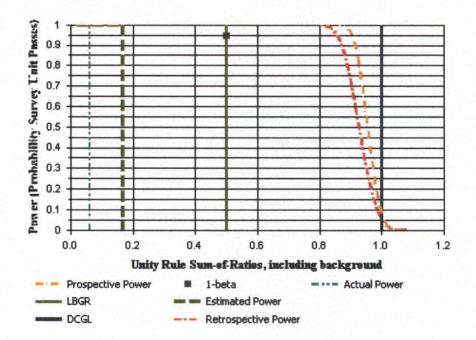
Attachment 2f COMPASS DQA Surface Soil Report with Retrospective Power Curve (4 Pages)



### **Assessment Summary**

Site:	9106-0008 (19 mrem	ı/yr)	
Planner(s):	Dale Randall		
Survey Unit Name:	9106-0008		
Report Number:			
Survey Unit Samples:	14		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	Reject Null Hypothe	esis (Survey Unit PAS	SES)

### **Retrospective Power Curve**





### **Survey Unit Data**

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

Sample Number	Туре	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ni-63 (pCi/g)
9106-0008-001F	S	0.13	0.4	0.23
9106-0008-002F	S	0.01	-0.01	-4.84
9106-0008-003F	S	0.32	0.2	-2.74
9106-0008-004F	S	0	0.04	-1.8
9106-0008-005F	S	0.03	0.27	-0.86
9106-0008-006F	S	0.78	0.49	2.28
9106-0008-007F	S	0.03	0.02	-2.33
9106-0008-008F	S	0.92	0.47	-0.41
9106-0008-009F	S	-0.01	0.02	-2.05
9106-0008-010F	S	0.25	0.34	0.12
9106-0008-011F	S	0.12	0.07	-3.34
9106-0008-012F	S	0.18	0.18	0.84
9106-0008-013F	S	0.03	0.01	-2.7
9106-0008-014F	S	-0.01	0	-1.72
Sample Number	Туре	SrY-90 (pCi/g)		
9106-0008-001F	S	0.01		
9106-0008-002F	S	0.02		
9106-0008-003F	S	0.01		
9106-0008-004F	S	-0.01		
9106-0008-005F	S	0		
9106-0008-006F	S	0.01		
9106-0008-007F	S	0		
9106-0008-008F	S	0		
9106-0008-009F	S	-0.01		
	S	0		
9106-0008-010F	5			
9106-0008-010F 9106-0008-011F	S	0.02		
	S S	-		
9106-0008-011F	S	0.02		



### Modified Data (Unity Rule SOR)

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

Sample Number	Туре	Sum-of-Ratios (SOR)
9106-0008-001F	S	0.12
9106-0008-002F	S	0.01
9106-0008-003F	S	0.15
9106-0008-004F	S	0
9106-0008-005F	S	0.05
9106-0008-006F	S	0.36
9106-0008-007F	S	0.01
9106-0008-008F	S	0.39
9106-0008-009F	S	-0.01
9106-0008-010F	S	0.14
9106-0008-011F	S	0.06
9106-0008-012F	S	0.08
9106-0008-013F	S	0.02
9106-0008-014F	S	0



### **Basic Statistical Quantities Summary**

Statistic	Survey Unit	Background	DQO Results
Sample Number	14	N/A	N=13
Mean (SOR)	0.10	N/A	0.17
Median (SOR)	0.06	N/A	N/A
Std Dev (SOR)	0.13	N/A	0.09
High Value (SOR)	0.39	N/A	N/A
Low Value (SOR)	-0.01	N/A	N/A