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Final Status Survey Final Report Phase IV

Appendix A2 Survey Unit Release Record 9106-0002, Discharge Canal



November 2006

CYAPCO FINAL STATUS SURVEY RELEASE RECORD DISCHARGE CANAL SURVEY UNIT 9106-0002

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Revision 0

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9106-0002 (Discharge Canal) is designated as Final Status Survey (FSS) Class 2 and consists of approximately 5520 m^2 (1.36 acres) of water covered sediment in an area located approximately 0.20 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 9106-0014 is to the north, (called north as orientated with the north to south flow of the Connecticut River), survey unit 9521 is to the east, Discharge Canal Survey Unit 9106-0003 is to the south and Survey Area 9520 is to the west. The Survey Unit comprises the canal sediments to the depth of three (3) feet from the top of the sediment layer or the original construction depth and it extends up the canal banks to the mean high water level.

This survey unit is bounded by reference coordinates E006 through E010 by S077 through S081 (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 9106-0002 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 pCi/g for Co-60, 0.024pCi/g for Cs-134 and 0.722 pCi/g for Cs-137.

An initial characterization survey of the Discharge Canal was performed during April and May of 2004. However, none of these samples were taken from within the footprint of Survey Unit 9106-0002.

A final characterization was performed by Site Closure personnel in April of 2006 to obtain the necessary data of sufficient data quality for Final Status Survey (FSS) planning purposes. Seven (7) 3-foot core sediment samples were taken from seven (7) locations. All of the samples were analyzed by gamma spectroscopy. Hard-to-Detect analyses were also conducted on one (1) of the seven (7) samples. Sr-90 was found to be a nuclide of concern based on the analysis of the sample. Since a variance cannot be determined from one (1) sample result, the variance associated with the fifteen (15) characterization samples measured for Sr-90 in an adjacent Survey Unit (SU9106-0003) was applied. Although no additional HTD testing was performed for characterization; four (4) of the fifteen (15) samples taken to demonstrate compliance with the release criteria during FSS were tested for the full suite of HTD nuclides to provide additional assurance that all of the radionuclides of concern were appropriately addressed. As a result of characterization, the radionuclides of concern identified for FSS planning purposes were Cs-137, Co-60 and Sr-90 (refer to Table 1).

Table 1 – Basic Statistical Quantities for Cs-137, Co-60 and Sr-90 from the Characterization Survey									
Parameter	Cs-137 (pCi/g)	Co-60 (pCi/g)	Sr-90 (pCi/g)						
Minimum Value:	4.58E-02	-4.90E-03	9.43E-04						
Maximum Value:	3.93E-01	2.53E-01	3.77E-02						
Mean:	1.64E-01	9.59E-02	1.45E-02						
Median:	1.53E-01	8.72E-02	1.08E-02						
Standard Deviation:	1.18E-01	7.94E-02	1.10E-02						
NOTE: The Operational DO	CGLs are 5.38 pCi/g fo	or Cs-137, 2.59 pCi/g	for Co-60 and						
1.05 for Sr-90; these are use	d in conjunction with	the unity rule to achi-	eve 17 mrem/yr						
TEDE									

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The FSS Engineer performed a visual inspection and walkdown 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 9106-0002 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the

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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:

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

The total dose under the LTP criteria is twenty-five (25) mrem/yr TEDE from all three (3) 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 existing and future groundwater dose values discussed above.

This survey unit is affected by existing groundwater, but is unaffected by future groundwater (reference CY memo ISC 06-024). Therefore, dose contribution from existing groundwater is two (2) mrem/yr TEDE, based on field data.

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

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Equation 2:

19 mrem/yr_{Total}=17 mrem/yr_{Soil}+2 mrem/yr_{Existing GW}+0 mrem/yr_{Future GW}

The allowable dose for soil in this survey unit is nineteen (19)mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in seventeen (17) mrem/yr TEDE is designated as the Operational DCGL, and has been established for the radionuclides of concern as provided in Table 2.

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

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Table 2 – Radionuclide Specific Base Case Soil DCGL, Operational DCGLs and Required Minimum Detectable Concentrations								
Radionuclide ⁽¹⁾	Base Case Soil DCGL (ρCi/g) ⁽²⁾	Operational DCGL (pCi/g) ⁽³⁾	Required MDC (ρCi/g) ⁽⁴⁾					
H-3	4.12E+02	2.80E+02	1.65E+01					
C-14	5.66E+00	3.85E+00	2.26E-01					
Mn-54	1.74E+01	1.18E+01	6.96E-01					
Fe-55	2.74E+04	1.86E+04	1.10E+03					
Co-60	3.81E+00	2.59E+00	1.52E-01					
Ni-63	7.23E+02	4.92E+02	2.89E+01					
Sr-90	1.55E+00	1.05E+00	6.20E-02					
Nb-94	7.12E+00	4.84E+00	2.85E-01					
Тс-99	1.26E+01	8.57E+00	5.04E-01					
Ag-108m	7.14E+00	4.86E+00	2.86E-01					
Cs-134	4.67E+00	3.18E+00	1.87E-01					
Cs-137	7.91E+00	5.38E+00	3.16E-01					
Eu-152	1.01E+01	6.87E+00	4.04E-01					
Eu-154	9.29E+00	6.32E+00	3.72E-01					
Eu-155	3.92E+02	2.67E+02	1.57E+01					
Pu-238	2.96E+01	2.01E+01	1.18E+00					
Pu-239/240	2.67E+01	1.82E+01	1.07E+00					
Pu-241	8.70E+02	5.92E+02	3.48E+01					
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00					
Cm-243/244	2.90E+01	1.97E+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 25 mrem/yr TEDE

(3) The Operational DCGL is equivalent to 17 mrem/yr TEDE

(4) The required MDC is equivalent to 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 performed in April and May of 2004 as discussed in Section 2. Cesium-137, Cobalt-60 and Strontium-90 were found to be the predominate radionuclides of concern. The basic statistical quantities (i.e., mean, standard deviation, median) for Cs-137, Co-60 and Sr-90 are provided in Table 1.

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

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

4. SURVEY DESIGN

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. Guidance for preparing FSS plans is provided in Procedure RPM 5.1-11, "*Preparation of Final Status Survey Plans*".

This survey was initially designed to ten (10) mrem/yr TEDE. At the time when the survey was designed, the dose contribution for existing and future groundwater had not yet been determined. Subsequently, a conservative value was chosen for the Operational DCGL. This approach is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used for this survey unit to demonstrate compliance with the LTP criteria is seventeen (17) mrem/yr TEDE, as discussed in Section 2 of this Release Record.

The DQO process determined that Cs-137, Co-60 and Sr-90 were the radionuclides of concern (refer to Section 3). The sum of fractions or unity rule was used with the individual Operational DCGLs because multiple radionuclides (Cs-137, Co-60 and Sr-90) were considered in the survey design.

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

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

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

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

The number of sediment samples for FSS was determined in accordance with Procedure RPM 5.1-12, "Determination of the Number of Samples for Final Status Survey." The Lower Bound of the Gray Region (LBGR) was set in

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accordance with Procedure RPM 5.1-11 to 0.867 to maintain the relative shift (Δ/σ) in the range of 1 and 3. The resulting relative shift was 2.0. 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 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 fifteen (15) sediment core samples for non-parametric statistical testing.

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

Subsequent to the initial design, the northern boundary of the survey unit was moved southward. The following are summary explanations of the design considerations and how these affected Survey Unit 9106-0002:

- An adjacent survey unit (SU 9106-0001) was reclassified to a Class 1 area.
- Since SU 9106-0001 exceeded the 2000 m² size limit for a Class 1 area, it was divided into a northern survey unit (SU 9106-0001) and a southern survey unit (SU 9106-0014).
- In order to maximize the area of the two (2) Class 1 Survey Units, the boundaries of Survey Units 9106-0002 and 9106-0014 were pushed southward.
- Changing the boundaries placed three (3) statistical sample locations (001F, 003F and 006F) and one (1) bias sample location (016F) outside of Survey Unit 9106-0002.
- •The affected statistical sample locations were replaced with three (3) randomly generated sample locations (017F, 018F and 019F).
- •The biased location was not relocated as it was placed to target an area of interest that was removed from the survey unit as a consequence of the boundary change.

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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.

Table 3 -Sample Measurement Locations with Associated GPS Coordinates								
Designation	Northing	Easting						
9106-0002-002F	236170.95	669239.34						
9106-0002-004F	236106.91	669202.36						
9106-0002-005F	236106.91	669276.31						
9106-0002-007F	236042.86	669165.39						
9106-0002-008F	236042.86	669239.34						
9106-0002-009F	236042.86	669313.29						
9106-0002-010F	235978.82	669202.36						
9106-0002-011F	235978.82	669276.31						
9106-0002-012F	235978.82	669350.26						
9106-0002-013F	235978.82	669424.21						
9106-0002-014F	235914.78	669313.29						
9106-0002-015F	235914.78	669387.24						
9106-0002-017F	236170.95	669165.39						
9106-0002-018F	236170.95	- 669239.34						
9106-0002-019F	236106.91	669128.41						

Although Procedure RPM 5.1-11 specifies that only 5% of the samples need to be selected for HTD analysis, four (4) soil samples were analyzed for HTDs, exceeding the 5% procedural requirement. Two (2) samples were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RAND" function. In addition, two (2) samples, which were determined to contribute the greatest dose based on gamma only analyses, were also selected for HTD analysis. Each sample would be sent off-site for a full suite analysis of the HTD radionuclides specified in Table 2.

The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*," included the collection of two (2) soil samples for "split sample" analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel "RAND" function. The number of quality control samples exceeded the LTP requirement of 5%.

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 (1)										
Feature	Design Criteria	Basis								
Survey Unit Land Area	5,520 m ²	Based on AutoCAD-LT and Visual Sample Plan calculations								
Number of Measurements	15	Type 1 and Type 2 errors were 0.05, sigma was .0666. the LBGR was set to 0.867 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 2.0								
Grid Spacing	20.61 m	Based on triangular grid								
Design DCGL	3.16 pCi/g Cs-137 1.52 pCi/g Co-60 0.62 pCi/g Sr-90	To achieve 10 mrem/yr TEDE								
Operational DCGL	5.38 ρCi/g Cs-137 2.59 ρCi/g Co-60 1.05 ρCi/g Sr-90	To achieve 17 mrem/yr TEDE ⁽²⁾ to demonstrate compliance with Equation 2 of this Release Record								
Scan Coverage	N/A	The LTP exempts this area								
Sediment Investigation Level	5.38 ρCi/g Cs-137 2.59 ρCi/g Co-60 1.05 ρCi/g Sr-90	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

(2) The allowable dose for soil in this survey unit is 17 mrem/yr TEDE as the total dose from existing and future groundwater has been established (reference CY memo ISC 06-024)

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 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 fifteen (15) 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 (9106-0002-004F, 9106-0002-007F, 9106-0003-0011 and 9106-0003-012F) were selected for HTD radionuclide analysis by the off-site laboratory.

The implementation of quality control measures included the collection of two (2) split samples at locations 9106-0002-014F and 9106-0002-018F for comparative analysis by the off-site laboratory.

6. SURVEY RESULTS

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories (GEL) – Charleston, South Carolina. The laboratory analyzed the fifteen (15) 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 met the acceptance criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty) in thirteen (13), Co-60 met the acceptance criteria for detection in fourteen (14) and Sr-90 met the acceptance criteria for detection in two (2) of the fifteen (15) samples.

Several other radionuclides that met the accepted criteria for detection (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 measurement method. All analyses were performed to the required MDC. Four

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(4) of the HTD radionuclides met the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty) in more than one 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 Soil Sample Results										
Sample Number	Cs-137 pCi/g	Co-60 ρCi/g	Sr-90 ρCi/g	Fraction of the Operational DCGL						
9106-0002-002F	2.64E-02	2.13E-02	9.83E-03	2.25E-02						
9106-0002-004F	1.23E-01	1.19E-01	7.10E-03	7.56E-02						
9106-0002-005F	1.98E-01	2.88E-01	7.01E-03	1.55E-01						
9106-0002-007F	3.81E-01	6.39E-01	6.81E-02	3.82E-01						
9106-0002-008F	1.63E-01	3.70E-01	7.85E-03	1.81E-01						
9106-0002-009F	1.84E-01	2.31E-01	2.94E-03	1.26E-01						
9106-0002-010F	6.61E-02	2.38E-01	-1.06E-02	9.41E-02						
9106-0002-011F	2.47E-01	5.26E-01	1.95E-02	2.68E-01						
9106-0002-012F	1.75E-01	1.18E-01	-4.47E-03	7.38E-02						
9106-0002-013F	2.43E-02	1.51E-01	-4.97E-04	6.23E-02						
9106-0002-014F	0.00E+00	1.46E-03	-2.35E-03	-1.67E-03						
9106-0002-015F	1.16E-01	5.07E-02	4.55E-03	4.55E-02						
9106-0005-017F	9.30E-02	8.07E-02	2.14E-02	6.88E-02						
9106-0005-018F	8.09E-02	1.45E-01	7.58E-03	7.82E-02						
9106-0005-019F	1.69E-01	1.21E-01	-1.31E-02	6.57E-02						

(1) The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137, 2.59 pCi/g for Co-60 and 1.05 for Sr-90; these are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE

Biased sampling was not required to resolve anomalies or to account for survey unit irregularities.

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."* One (1) split-sample (9106-0002-018F/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, Cs-137 and K-40, a natural radioisotope, were both found to be present at acceptable levels of agreement, therefore, the comparison was determined to be

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acceptable. For the other QC split samples, there was an acceptable level of agreement between the samples for the radionuclides of concern.

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

Sample investigation levels were not exceeded for this unit, consequently none were performed.

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 is unnecessary and that the remaining residual radioactivity in soil was ALARA.

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

The survey was designed to ten (10) mrem/yr TEDE, which was conservative and necessary at the time of FSS planning. It is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used to demonstrate compliance with the LTP criteria is seventeen (17) 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*," for completeness and consistency. The sampling design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. The Sign Test shows that the survey unit passes FSS.

Documentation was complete and legible. Surveys and sample collection were consistent with the DQOs and were sufficient to ensure that the survey unit was properly designated as Class 2.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation).

RELEASE RECORD

The sample 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 2g. This would indicate a change to the original LBGR to maintain the number of samples at fifteen (15) to meet the Operational DCGL. However, the value of the LBGR is less of 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 release criteria with adequate power as required by the DQOs.

The range of the data, about 3.84 standard deviations, was not unusually large. The difference between the mean and median was 37.5% of the standard deviation which indicates some skewness in the data. The data's 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 1.69.

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

12. ANOMALIES

The anomaly associated with the disagreement between the field split number 9106-0002-018F/S 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. However, comparisons of results for other radionuclides present in the sample were sufficient to demonstrate appropriate implementation of sampling Quality Controls.

13. CONCLUSION

Survey Unit 9106-0002 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.

The dose contribution from sediment in this survey unit is 1.9 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

RELEASE RECORD

This survey unit is affected by existing groundwater (reference CY memo ISC 06-024). It has been determined that the dose contribution from groundwater sources is bounded by 2.0 mrem/yr TEDE.

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

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 3.9 mrem/yr Total Effective Dose Equivalent (TEDE).

14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Sample and Statistical Data

RELEASE RECORD

Attachment 1 Figures (4 pages)









RELEASE RECORD

Attachment 2 Sample and Statistical Data

RELEASE RECORD

Attachment 2a Sample Data (229 Pages)

Table of Contents

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CASE NARRATIVE For CONNECTICUT YANKEE RE: Sediment PO# 002332 Work Order: 164220 SDG: MSR #06-0755

June 30, 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 June 02, 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):

Sample ID	<u>Client Sample ID</u>
164220001	9106-0002-001F
164220002	9106-0002-002F
164220003	9106-0002-003F
164220004	9106-0002-004F
164220005	9106-0002-005F
164220006	9106-0002-006F
164220007	9106-0002-006FS
164220008	9106-0002-007F
164220009	9106-0002-008F

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

164220010	9106-0002-009F
164220011	9106-0002-010F
164220012	9106-0002-011F
164220013	9106-0002-012F
164220014	9106-0002-013F
164220015	9106-0002-014F
164220016	9106-0002-014FS
164220017	9106-0002-015F
164220018	9106-0002-016F

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:

Sixteen sediment samples were analyzed for FSSGAM and Sr-90. 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

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

Chain of Custody and Supporting Documentation

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Connecticut Y 362 Injun I	Ankee At Hollow Road, H 860-26'	t omic Po East Hampton 7-2556	wer C , CT 0642	ompan 4	y			Ch	ain o	f Custod	y Form _{No.}	2006-00371
Project Name: Haddam N	eck Decomr	nissioning					A	nalyses	Reques	ted	Lab Use Only	
Contact Name & Phone: Jack McCarthy 860-267-	-2556 Ext.	3024									Comments:	
Analytical Lab (Name, Cit General Engineering Labo 2040 Savage Road. Charle 843 556 8171. Attn. Cher	ty, State) pratories eston SC. 294 yl Jones	407				SSGAM	SSALL	r-90				
Priority: 🛛 30 D. 🗌 14 D. 🗍 7 D.		Sample		Container Size-			S			164	220%	
Sample Designation	Date	Time	Code	Code	Code						Comment, Preservation	Lab Sample ID
9106-0002-001F*	5/17/06	10:42	SE	С	BP	X		X			Transferred from COC 2006-00357	
9106-0002-002F	5/18/06	09:43	SE	C	BP		X				Transferred from COC 2006-00361	
9106-0002-003F*	5/18/06	10:14	SE	C	BP	X		X			Transferred from COC 2006-00361	
9106-0002-004F	5/18/06	10:39	SE	С	BP	X		X			Transferred from COC 2006-00361	
9106-0002-005F	5/18/06	12:49	SE	C	BP	X		X			Transferred from COC 2006-00364	
9106-0002-006F	5/18/06	13:14	SE	C	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	1		Transferred from COC 2006-00364	
9106-0002-008F	5/18/06	14:04	SE	C	BP	X		X	1		Transferred from COC 2006-00364	
NOTES: PO #: 002332 MSR #: 06- SSWP# NA 🛛 LTP QA 🗌 Radwaste QA 🗌 Non QA Samples Shipped Via: 0755 Client requested analysis canceled CD 6/5/06 See enaile									Internal Container Temp.: Deg. C Custody Sealed?			
1) Relinquished By Date/Time					2) Received By Date/Time				Dther	Custody Seal Intact?		
3) Relinquished By Date/Tim			.e	4) Recei	ved By				Date/	Гime	Bill of Lading #	YO NO
5) Relinquished By Date/Tim			e	6) Recei	ved By				Date/	Гіте		

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Connecticut Y 362 Injun F	ankee At Iollow Road, E 860-267	omic Po Cast Hampton, 2-2556	wer C , CT 06424	ompan 4	У			Cha	ain o	f Cus	tody	v Form _{No.}	2006-00372
Project Name: Haddam No	eck Decomn	nissioning					<u>A</u>	nalyses	Reques	sted		Lab Use Only	
Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext. 3	3024										Comments:	
Analytical Lab (Name, Cit General Engineering Labo 2040 Savage Road. Charle 843 556 8171. Attn. Chery	y, State) ratories ston SC. 294 yl Jones	407				SSGAM	FSSALL	Sr-90	-				
Priority: 🔀 30 D. 🗌 14 D). 🗌 7 D.		Madia	Sample	Container Size-								·
Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation	Lab Sample ID
9106-0002-009F	5/18/06	14:28	SE	С	BP		X					Transferred from COC 2006-00364	
9106-0002-010F	5/18/06	14:50	SE	С	BP	X		X				Transferred from COC 2006-00364	
9106-0002-011F	5/19/06	08:10	SE	С	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	
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	C	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	
9106-0002-015F	5/19/06	10:29	SE	C	BP	X		X				Transferred from COC 2006-00365	
9106-0002-016F	5/19/06	13:19	SE	C	BP	X		X				Transferred from COC 2006-00365	
NOTES: PO #: 002332 MSR #: 06- SSWP# NA 🛛 LTP QA 🗌 Radwaste QA 🗌 Non QA Samples Shipped Via: Internal 0755 Great containe 20155 Client requested analysis canceled CD 6/5/20 🗌 Hand Custody See email									Internal Container Temp.: Deg. C Custody Sealed?				
1) Relinguished By	26	Date/Tim	ie 875	2) Rece	ived By		(6-2.06	Date	Time 120		Dther	Custody Seal Intact?
3) Relinquished By Date/Tim				ic 4) Received By Date/Time					Bill of Lading #	Y C N C			
5) Relinquished By		Date/Tim	ne	6) Rece	ived By				Date/	/Time		1907 1173 0101	

Connecticut Yankee C Statement of Work for Analytical Lab Services CY-ISC-SOW-001 Figure 1. Sample Check-in List 76 Ъ Date/Time Received:_ MSR#06-0755 SDG#: 1642201 Work Order Number: 2006 51/0 Shipping Container ID: Chain of Custody #_ 1. Custody Seals on shipping container intact? Yes IX No I 2. Custody Seals dated and signed? Yes / 3. Chain-of-Custody record present? Yes [X] No [Cooler temperature _ 4. 5. Vermiculite/packing materials is: Wet [] Dry [] 1000 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: 6206 Date: Telephoned to: On By



SAMPLE RECEIPT & REVIEW FORM

ويسترج والمراجع والم	_			PM use only					
Client: Connecticut Yon K-	٤			SDG/ARCOC/Work Order: 164220					
Date Received: 6.2.06				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Received By:				Clipton					
r									
Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)					
Shipping containers received intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)					
Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolanu # 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?			S	amplé ID's, containers affected and observed pH:					
6 VOA vials free of headspace (defined as < 6mm bubble)?	J	7	S	ample ID's and containers affected:					
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)			Τ						
8 Samples received within holding time?			ld	's and tests affected:					
9 Sample ID's on COC match ID's on bottles?			Sa	mple ID's and containers affected:					
Date & time on COC match date & time on bottles?			Sar	nple ID's affected:					
1 Number of containers received match number indicated on COC?			San	nple ID's affected:					
2 COC form is properly signed in relinquished/received sections?				Co€# 2006-00371					
Air Bill , Tracking #'s, & Additional Comments									
Suspected Hazard Information	Regulated	High Level	RSC *If regu	D RAD Receipt #					
PCB Regulated?	12		Max	imum Counts Observed*: 26 CPM					
Shipped as DOT Hazardova			Com	iments:					
Material? If ves contact Wasta			H270	rd Class Chimad					
Manager or ESH Manager			UN#	au Class Snipped:					
PM (or PMA) review of Hazard abased			L						
and the second	ion:			Initials US Date: 6206					

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 - 00372 5109 Shipping Container ID: <u>1909</u> 4 Yes 🕅 No [] Custody Seals on shipping container intact? 1. 2. Custody Seals dated and signed? Yes 🔏] No [] Chain-of-Custody record present? 3. Yes 1 No |] Cooler temperature 4. Wet [] Dry [] hopacking botwe 5. Vermiculite/packing materials is: 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 Were any anomalies identified in sample receipt? 10. Yes [] No [) Description of anomalies (include sample numbers): 11. Sample Custodian/Laboratory: 6.206 Date: Telephoned to:_ On By

9



SAMPLE RECEIPT & REVIEW FORM

"PATORIES"						PM use only
Client: Connecticut Conkec					SDG	:/ARCOC/Work Order: 164220
Date Received: 6-06					PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: C9						Clipton
				- 1		
Sample Receipt Criteria		Yes	Ň	WI ;		Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers and sealed?	received intact				Circle	e Applicable: seals broken damaged container leaking container other (describe)
Samples requiring c preservation within Record preservation	old (4 +/- 2 C)? method.				Circle	e Coolant # ice bags blue ice dry ice none other describe)
Chain of custody do included with shipm	cuments ent?					
4 Sample containers in sealed?	ntact and				Circle	Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring ch preservation at prope	nemical er pH?				Sample	e ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				1	Sample	e ID's and containers affected:
Are Encore container 7 (If yes, immediately VOA laboratory)	rs present? deliver to	/				
8 Samples received wit time?	hin holding				ld's and	d tests affected:
9 Sample ID's on COC on bottles?	match ID's				Sample	ID's and containers affected:
10 Date & time on COC & time on bottles?	match date				Sample	ID's affected:
11 Number of containers match number indicat	received ed on COC?				Sample	ID's affected:
12 COC form is properly relinquished/received	v signed in sections?					(oc # 2006-00371 cap 6/2/06
Air Bill, Tracking #'s, & Additional Comments						
Suspected Hazard Information		Regulated	Regulated	High Level	RSO R *If > x regulate investig	AD Receipt #
A Radiological Classification?		Ŀ	\square		Maxim	um Counts Observed*: 20 CPM
B PCB Regulated?		΄ Τ			Comme	ents:
Material? If yes, contact Waste Manager or ESH Manager.		\overline{A}			Hazard UN#:	Class Shipped:
PM (or PMA) review o	f Hazard classiti	icatio	on:			Initials Date: 67.06


Radiochemistry Case Narrative Connecticut Yankee Atomic Power Co. (YANK) Work Order 164220

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:	540462
Prep Batch Number:	535702
Dry Soil Prep GL-RAD-A-021 Batch Number:	535666

Sample ID	Client ID
164220002	9106-0002-002F
164220010	9106-0002-009F
1201117597	Method Blank (MB)
1201117598	164220002(9106-0002-002F) Sample Duplicate (DUP)
1201117599	164220002(9106-0002-002F) Matrix Spike (MS)
1201117600	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.

<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: 164220002 (9106-0002-002F).

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 1201117598 (9106-0002-002F) was recounted due to a peak shift.

Miscellaneous Information:

NCR Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Alphaspec Pu, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	540464
Prep Batch Number:	535702
Dry Soil Prep GL-RAD-A-021 Batch Number:	535666

Sample ID	Client ID
164220002	9106-0002-002F
164220010	9106-0002-009F
1201117601	Method Blank (MB)
1201117602	164220002(9106-0002-002F) Sample Duplicate (DUP)
1201117603	164220002(9106-0002-002F) Matrix Spike (MS)
1201117604	Laboratory Control Sample (LCS)

SOP Reference

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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: 164220002 (9106-0002-002F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint 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:	540465
Prep Batch Number:	535702
Dry Soil Prep GL-RAD-A-021 Batch Number:	535666

 Sample ID
 Client ID

 164220002
 9106-0002-002F

 164220010
 9106-0002-009F

 1201117605
 Method Blank (MB)

 1201117606
 164220002(9106-0002-002F) Sample Duplicate (DUP)

 1201117607
 164220002(9106-0002-002F) Matrix Spike (MS)

 1201117608
 Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 164220002 (9106-0002-002F).

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 1201117605 (MB) 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.

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Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Gamma,Solid-FSS GAM & ALL FSS
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	536186
Prep Batch Number:	535666

Sample ID	Client ID
164220002	9106-0002-002F
164220004	9106-0002-004F
164220005	9106-0002-005F
164220007	9106-0002-006FS
164220008	9106-0002-007F
164220009	9106-0002-008F
164220010	9106-0002-009F
164220011	9106-0002-010F
164220012	9106-0002-011F
164220013	9106-0002-012F
164220014	9106-0002-013F
164220015	9106-0002-014F
164220017	9106-0002-015F
164220018	9106-0002-016F
1201107352	Method Blank (MB)
1201107353	164220002(9106-0002-002F) Sample Duplicate (DUP)
1201107354	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this

narrative has been analyzed in accordance with GL-RAD-A-013 REV# 11.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 164220002 (9106-0002-002F).

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

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high full width half maximum.	Cesium-134	164220012
		Cesium-137	164220015
		Manganese-54	164220014
UI	Data rejected due to interference.	Europium-155	164220010
			164220012
			164220018
		Manganese-54	164220015
UI	Data rejected due to low abundance.	Cesium-134	164220005
			164220007
			164220017
			164220018

Method/Analysis Information

Product:	GFPC, Sr90, solid-ALL FSS
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	539388
Prep Batch Number:	535702
Dry Soil Prep GL-RAD-A-021 Batch Number:	535666

Sample ID	Client ID
164220002	9106-0002-002F
164220004	9106-0002-004F
164220005	9106-0002-005F
164220007	9106-0002-006FS
164220008	9106-0002-007F
164220009	9106-0002-008F
164220010	9106-0002-009F
164220011	9106-0002-010F
164220012	9106-0002-011F
164220013	9106-0002-012F
164220014	9106-0002-013F
164220015	9106-0002-014F
164220017	9106-0002-015F
164220018	9106-0002-016F
1201114898	Method Blank (MB)
1201114899	164220002(9106-0002-002F) Sample Duplicate (DUP)
1201114900	164220002(9106-0002-002F) Matrix Spike (MS)
1201114901	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 164220002 (9106-0002-002F).

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 164220014 (9106-0002-013F) was recounted due to being originally counted on a detector that did not meet daily background and efficiency checks. Sample 164220013 (9106-0002-012F) was recounted due to the activity of the sample being between two and three sigma TPU.

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
164220002	9106-0002-002F
164220010	9106-0002-009F
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.

Method/Analysis Information

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:	535702
Dry Soil Prep GL-RAD-A-021 Batch Number:	535666

Sample ID	Client ID
164220002	9106-0002-002F
164220010	9106-0002-009F
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)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 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.

Method/Analysis Information

Product:	Liquid Scint Ni63, Solid-ALL FSS
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	541000
Prep Batch Number:	535702
Dry Soil Prep GL-RAD-A-021 Batch Number:	535666

Sample ID	Client ID
164220002	9106-0002-002F
164220010	9106-0002-009F
1201118869	Method Blank (MB)
1201118870	164220002(9106-0002-002F) Sample Duplicate (DUP)
1201118871	164220002(9106-0002-002F) Matrix Spike (MS)
1201118872	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 164220002 (9106-0002-002F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

Nonconformance reports are generated to document any procedural anomalies that may deviate from

referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

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

Sample ID	Client ID
164220002	9106-0002-002F
164220010	9106-0002-009F
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.

Method/Analysis Information

Product:	Liquid Scint C14, Solid All,FSS
Analytical Method:	EPA EERF C-01 Modified
Analytical Batch Number:	536336

Sample ID	Client ID
164220002	9106-0002-002F
164220010	9106-0002-009F
1201107670	Method Blank (MB)
1201107671	164220002(9106-0002-002F) Sample Duplicate (DUP)
1201107672	164220002(9106-0002-002F) Matrix Spike (MS)
1201107673	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: 164220002 (9106-0002-002F).

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.

<u>Certification Statement</u>

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.

bell.

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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#06-0755 GEL Work Order: 164220

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.

Reviewed by

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

Certificate of Analysis

Company Address :	: Connecticut 362 Injun H	t Yankee A Iollow Rd	tomic Power	·								
Contact:	East Hampt Mr. Jack M	on, Connec cCarthy	cticut 06424				R	leport Date: Jui	ne 29, 200	96		
Project:	Soils PO# 0	002332										
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID: D: ate: bate:		9106-00 1642200 SE 18-MA 02-JUN Client 14.5%	002–002F 002 Y–06 J–06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch I	Mtd
Rad Alpha Spec Analy	/sis							<u></u>				
Alphaspec Am241, Cr	n, Solid ALL FS	55										
Americium-241	U	-0.0378	+/-0.0665	0.0376	+/-0.0666	0.165	pCi/g	MXA 1	06/22/0	5 11 19 :	540462	1
Curium-242	U	0.00	+/-0.0752	0.00	+/-0.0752	0.104	pCi/g					
Curium-243/244	U	0.0331	+/-0.0649	0.00	+/-0.065	0.0897	pCi/g					
Alphaspec Pu, Solid–	ALL FSS											
Plutonium-238	U	0.032	+/-0.0628	0.00	+/-0.0629	0.0868	pCi/g	MXA 1	06/22/00	5 1119 :	540464	2
Plutonium-239/240	U	-0.19	+/-0.124	0.210	+/-0.125	0.506	pCi/g					
Liquid Scint Pu241, S	olid-ALL FSS											
Plutonium-241	U	8.31	+/-9.79	7.84	+/-9.82	16.4	pCi/g	MXA	06/23/06	5 2100 5	540465	3
Rad Gamma Spec Ana	lysis							I				
Gamma,Solid–FSS G	AM & ALL FSS	5										
Actinium-228		0.646	+/-0.123	0.0498	+/-0.123	0.107	pCi/g	MJH1	06/19/06	5 2034 5	536186	4
Americium-241	U	0.0463	+/-0.0455	0.0844	+/-0.0455	0.174	pCi/g					
Bismuth-212		0.497	+/-0.194	0.113	+/-0.194	0.239	pCi/g					
Bismuth-214		0.534	+/-0.0856	0.025	+/-0.0856	0.053	pCi/g					
Cesium-134	U	0.0362	+/-0.0269	0.0185	+/-0.0269	0.0391	pCi/g					
Cesium-137	U	0.0264	+/-0.01//	0.0168	+/-0.017/	0.0353	pCi/g					
Cobalt-60	U	0.0213	+/0.0149	0.010	+/-0.0149	0.0349	pCi/g					
Europium=152	U	-0.00203	± -0.0433	0.039	+/-0.0433	0.0813	pCI/g					
Europium=154	U	0.00291	+/-0.0050 +/-0.0468	0.0404	+/-0.0030	0.100	pCi/g					
Lead-212	U	0.0554	+/-0.0408	0.0733	+/-0.0408	0.0943	pCi/g					
Lead-214		0.703	+/-0.0664	0.0272	+/-0.0664	0.0569	nCi/g					
Manganese-54	U	0.00163	+/-0.0184	0.0156	+/-0.0184	0.0331	pCi/g					
Niobium-94	Ũ	0.00959	+/-0.014	0.0127	+/-0.014	0.0269	pCi/g					
Potassium-40		9.42	+/-0.696	0.115	+/-0.696	0.257	pCi/g					
Radium-226		0.534	+/-0.0856	0.025	+/-0.0856	0.053	pCi/g					
Silver-108m	U	0.0101	+/-0.0162	0.0115	+/-0.0162	0.0244	pCi/g					
Thallium-208		0.227	+/-0.0424	0.014	+/-0.0424	0.0296	pCi/g		,			
Rad Gas Flow Proport	ional Counting	5										
GFPC, Sr90, solid–A	LL FSS											
Strontium-90	U	0.00983	+/-0.0153	0.015	+/-0.0153	0.0339	pCi/g	BXF1	06/25/06	1024 5	39388	5
Rad Liquid Scintillatio	on Analysis											

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Report Date: June 29, 2006

Certificate of Analysis

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

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

Project: Client ID: 9106-0002-002F Client Sample ID: YANK01204 Sample ID: 164220002 YANK001 Vol. Recv.: Qualifier Parameter Result Uncertainty LC TPU MDA Units **DF** Analyst Date Time Batch Mtd **Rad Liquid Scintillation Analysis** LSC, Tritium Dist, Solid-HTD2, ALL FSS 3.84 +/-6.26 5.04 +/-6.26 10.6 NXP1 06/17/06 1642 535984 6 Tritium U pCi/g Liquid Scint C14, Solid All,FSS +/-0.0864 Carbon-14 -0.0461 0.0732 +/-0.0864 0.148 pCi/g ATH2 06/16/06 0624 536336 7 U Liquid Scint Fe55, Solid-ALL FSS +/-17.9 +/-18.0 Iron-55 U 10.2 13.1 27.7 pCi/g SLN1 06/21/06 0845 538969 8 Liquid Scint Ni63, Solid-ALL FSS +/-5.83 Nickel-63 4.21 4.77 +/-5.83 9.82 pCi/g SLN1 06/28/06 0021 541000 9 U Liquid Scint Tc99, Solid-ALL FSS 0.182 +/-0.211 SXE1 06/14/06 1747 536314 10 Technetium-99 U -0.122+/-0.2110.375 pCi/g

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AXP2	06/02/06	1919	535666

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	92	(15%-125%)	
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	86	(15%-125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	83	(25%-125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	87	(15%-125%)	

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Certificate of Analysis

Company : Address :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power								
Contact:	East Hampt Mr. Jack Me	on, Connec cCarthy	cticut 06424		006						
Project:	Soils PO# 0	02332									
	Client San Sample ID	nple ID:):		9106-000 16422000)2-002F)2		Project: YANK01204 Client ID: YANK001 Vol. Recv.:				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd		
Carrier/Tracer Recovery	Liqu	id Scint N	i63, Solid-ALL	FS	74		(25%-125%)				
Carrier/Tracer Recovery	rrier/Tracer Recovery Liquid Scint Tc99, Solid-ALL F				83		(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	t Yankee A Iollow Rd	tomic Power						
Contact:	East Hampt Mr. Jack M	on, Connec cCarthy	cticut 06424				R	eport Date: June	29, 2006
Project:	Soils PO# 0	02332							
	Client San Sample IE Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: vate:		9106-0 164220 SE 18-MA 02-JUN Client 17.9%	002-004F 004 Y-06 J-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst I	Date Time Batch Mtd
Rad Gamma Spec Ana	lysis	_							
Gamma,Solid–FSS G	AM & ALL FSS	5							
Actinium-228		0.601	+/-0.162	0.0507	+/-0.162	0.110	pCi/g	MJH1 0	5/20/06 0609 536186 1
Americium-241	U	0.0156	+/-0.0229	0.020	+/-0.0229	0.0411	pCi/g		
Bismuth-212		0.375	+/-0.210	0.114	+/-0.210	0.244	pCi/g		
Bismuth-214		0.387	+/-0.0828	0.0295	+/-0.0828	0.0624	pCi/g		
Cesium-134	U	0.0216	+/-0.0203	0.0192	+/-0.0203	0.0407	pCi/g		
Cesium-137		0.123	+/-0.0376	0.0158	+/-0.0376	0.0335	pCi/g		
Cobalt-60		0.119	+/-0.0405	0.0151	+/0.0405	0.0333	pCi/g		
Europium-152	U	0.0142	+/-0.0433	0.0394	+/-0.0433	0.0824	pCi/g		
Europium-154	U	-0.0342	+/-0.0602	0.0476	+/-0.0602	0.104	pCi/g		
Europium-155	U	0.0127	+/-0.0398	0.0364	+/-0.0398	0.0751	pCi/g		
Lead-212		0.535	+/-0.0754	0.0224	+/-0.0754	0.0464	pCi/g		
Lead-214		0.435	+/-0.0879	0.0287	+/-0.0879	0.060	pCi/g		
Manganese-54	U	0.0193	+/-0.0241	0.0182	+/-0.0241	0.0386	pCi/g		
Niobium-94	U·	-6.520E-	+/-0.0183	0.0154	+/-0.0183	0.0327	pCi/g		
Potassium-40		9.32	+/-0.884	0.122	+/-0.884	0.274	nCi/g		
Radium-226		0 387	+/-0.0828	0.0295	+/-0.0828	0.0624	nCi/g		
Silver-108m	U	-0.00653	+/-0.0164	0.014	+/-0.0164	0.0295	nCi/g		
Thallium-208	Ũ	0.165	+/-0.0417	0.0157	+/-0.0417	0.0332	pCi/g		
Rad Gas Flow Proport	ional Counting	g	,	010127		0.0552	PB		
GEPC_Sr90_solid=A	LL ESS								
Strontium-90	U	0.0071	+/-0.0176	0.0183	+/-0.0176	0.0408	pCi/g	BXF1 06	5/25/06 1025 539388 2
The following Prep M	ethods were p	erformed							
Method Des	cription				Analyst	Date	Time	Prep Batch	
Dry Soil Prep Dry	Soil Prep GL-	RAD-A-0	21		AXP2	06/02/0)6 1919	535666	
The following Analyti	cal Methods w	ere perfor	med						
Method Des	cription								
1 EM	L HASL 300, 4	.5.2.3							
2 EPA	905.0 Modifie	d							
Surrogate/Tracer reco	overy Test				Recovery%	Acce	ptable Limits	.	

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Certificate of Analysis

	-	T •			•	-			•	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
		Client Sam Sample ID:	ple ID:		9106-000 16422000	2-004F 4		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
	Project:	Soils PO# 00	2332							
	Contact:	East Hampto Mr. Jack Mc	n, Connec Carthy	ticut 06424				ł	Report Date: June 29, 20	006
	Company : Address :	Connecticut 362 Injun Ho	Yankee A ollow Rd	tomic Power						

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	70	(25%-125%)	

Notes:

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- > Result is greater than value reported
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- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated

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

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

The above sample is reported on a dry weight basis.

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Certificate of Analysis

Co Ao	ompany : ldress :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power								
Co	ontact:	East Hampto Mr. Jack Mo	on, Connec Carthy	ticut 06424				R	eport Date: Ju	ne 29, 20)06	
	ojeci.	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ite: ate:		9106-0 164220 SE 18-MA 02-JUN Client 18.4%	002-005F 005 Y-06 \-06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date	Time Batch	Mtd
Rad Gamma Sr	pec Analy	/sis										
Gamma Solid	-ESS GA	M& ALLESS									-	
Actinium-22	8	M & ALL 1 55	0 796	+/-0 176	0.0562	+/0.176	0.121	pCi/g	MIHI	06/19/0	6 2036 536186	5 1
Americium-2	0 241	11	0.064	+/-0.0949	0.0502	+/-0.0949	0.121	pCi/g	WIJIII	00/19/0	0 2050 550180	, 1
Bismuth-212		U	0.621	+/-0.246	0.124	+/-0.246	0.265	pCi/g				
Bismuth-214			0.572	+/-0.107	0.0285	+/-0.107	0.0607	pCi/g				
Cesium-134		UI	0.00	+/-0.0246	0.0212	+/-0.0246	0.0449	pCi/g				
Cesium-137		•••	0.198	+/-0.0401	0.0177	+/-0.0401	0.0375	pCi/g				
Cobalt-60			0.288	+/-0.0484	0.0149	+/-0.0484	0.0329	pCi/g				
Europium-15	52	U	-0.03	+/-0.0499	0.0428	+/-0.0499	0.090	pCi/g				
Europium-15	54	U	-0.0212	+/-0.0594	0.0475	+/-0.0594	0.104	pCi/g				
Europium-15	55	U	0.0189	+/-0.0589	0.0539	+/-0.0589	0.112	pCi/g				
Lead-212			0.765	+/-0.0851	0.0266	+/-0.0851	0.0555	pCi/g				
Lead-214			0.618	+/-0.0965	0.0303	+/-0.0965	0.0639	pCi/g				
Manganese-5	54	U	-0.0127	+/-0.0192	0.0157	+/-0.0192	0.0338	pCi/g				
Niobium-94		U	0.0223	+/-0.0189	0.0136	+/-0.0189	0.0291	pCi/g				
Potassium-40)		10.2	+/0.990	0.128	+/-0.990	0.287	pCi/g				
Radium-226			0.572	+/-0.107	0.0285	+/-0.107	0.0607	pCi/g				
Silver-108m		U7.	020E-05	+/-0.0166	0.0145	+/-0.0166	0.0307	pCi/g				
Thallium-208	8		0.219	+/-0.0403	0.014	+/-0.0403	0.030	pCi/g				
Rad Gas Flow I	Proportio	nal Counting	;									
GFPC, Sr90, s	olid-ALI	L FSS										
Strontium-90)	U	0.00701	+/-0.0155	0.0159	+/-0.0155	0.0356	pCi/g	BXF1	06/25/0	6 1025 539388	2
The following	Prep Met	thods were pe	erformed									
Method	Descr	iption				Analyst	Date	Time	Prep Batc	h		
Dry Soil Prep	Dry S	oil Prep GL-I	RAD-A-0	21		AXP2	06/02/0)6 1919	535666			
The following A	Analytica	l Methods we	ere perfori	ned					1			
method	Descr	iption										
1	EML	HASL 300, 4.	5.2.3									
2	EPA 9	05.0 Modifie	d									
Surrogate/Tra	cer recov	ery Test				Recovery%	Acce	ptable Limits	;			

GFPC, Sr90, solid-ALL FSS (25%-125%) Carrier/Tracer Recovery 75

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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:	9106-0002-005F 164220005	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

Notes:

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

The above sample is reported on a dry weight basis.

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Certificate of Analysis

Comp Addre	any: Co ss: 36	nnecticu 2 Injun H	t Yankee A Iollow Rd	tomic Power								
Conta	Ea ct: Mi	st Hampt r. Jack M	ton, Connec cCarthy	ticut 06424				R	leport Date: Ju	ne 29, 2006		
Projec	et: So	ils PO# (002332									
	Cl Sa M Ca Ca M	lient Sar ample II atrix: ollect Da eceive D ollector: loisture:	nple ID: D: ate: Date:		9106-0 164220 SE 18-MA 02-JUN Client 9.72%	002-006FS 007 Y-06 I-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Q	ualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date T	ime Batch	Mtd
Rad Gamma Spec	Analysis					•						
Gamma,Solid–FS	S GAM &	ALL FSS	S									
Actinium-228			0.565	+/-0.182	0.074	+/-0.182	0.164	pCi/g	MJH1	06/19/06 2	036 536186	1
Americium-241		U	0.0249	+/-0.0997	0.0944	+/-0.0997	0.197	pCi/g		00/19/00 2	050 550100	•
Bismuth-212		Ŭ	0.325	+/-0.322	0.178	+/-0.322	0.387	pCi/g				
Bismuth-214		U	0.508	± -0.128	0.0387	+/-0.128	0.0839	pCi/g				
Cesium-134		Ш	0.00	+/-0.0409	0.0272	+/-0.0409	0.059	nCi/g				
Cesium-137		01	0.0576	+/-0.0404	0.0272	+/-0.0404	0.0491	pCi/g				
Cobalt-60			0.128	+/-0.0573	0.0194	+/-0.0573	0.0448	pCi/g				
Europium-152		П	-0.00196	+/-0.0607	0.0546	+/-0.0607	0.117	pCi/g				
Europium-152		U U	-0.0619	+/-0.0812	0.0510	+/-0.0812	0.139	pCi/g				
Europium-155		U U	0.0375	+/-0.075	0.0631	+/-0.075	0.132	nCi/g				
Lead-212		U	0.680	+/-0.0717	0.0001	+/-0.0717	0.0677	nCi/g				
Lead-212			0.599	+/-0.110	0.0326	+/-0110	0.0845	pCi/g				
Manganese-54		П	0.0149	+/-0.0283	0.0251	+/-0.0283	0.0543	nCi/g				
Niobium-94		U U	-0.0142	+/-0.0203	0.0231	+/-0.0203	0.0394	pCi/g				
Potassium-40		U	10.5	+/-1.02	0.173	+/-1.02	0 407	pCi/g				
Radium-226			0 508	+/-0.128	0.175	+/-0.128	0.0839	pCi/g				
Silver-108m		11	-0.0207	+/-0.0197	0.0157	+/-0.0197	0.0342	nCi/g				
Thallium-208		U	0.0207	+/-0.0474	0.0127	+/-0.0474	0.0372	pCi/g				
Ded Cos Flow Pror	ortional	Countin	0.2 <i>3</i> /	17 0.0174	0.0222	17 0.0474	0.0475	peng				
Kau Gas Flow Flog		- Counting	B									
GFPC, Sr90, solia	I-ALL FS	S										
Strontium-90		U	0.00243	+/-0.0125	0.0135	+/-0.0125	0.0306	pCi/g	BXFI	06/25/06 I	025 539388	2
The following Pre	p Method	s were p	erformed									
Method	Descriptio)n				Analyst	Date	Tim	e Prep Batc	h		
Dry Soil Prep	Dry Soil P	rep GL-	RAD-A-0	21		AXP2	06/02/	06 1920	535666			
The following Ana	lytical Me	ethods w	ere perfor	ned								
Method 1	Descriptio	n										
1	EML HAS	SL 300, 4	.5.2.3									
2	EPA 905.0) Modifie	ed									
Surrogate/Tracer	er recovery Test					Recovery%	<u> </u>	eptable Limit	S			
Carrier/Tracer Reco	arrier/Tracer Recovery GFPC, Sr90, solid-ALL FSS				81	(2	25%-125%)					

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Certificate of Analysis

Con Add	npany : Iréss :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd			
Con	tact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		म	leport Date: June 29, 2006
Proj	ect:	Soils PO# 002332			
		Client Sample ID: Sample ID:	9106-0002-006FS 164220007	Project: Client ID: Vol. Recv.:	YANK01204 YANK001
Parameter		Qualifier Result Uncertainty	LC TPU	MDA Units	DF Analyst Date Time Batch Mtd

Notes:

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- \wedge 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 :	: Connecticu 362 Injun H	t Yankee A Iollow Rd	tomic Power							
Contact:	East Hampt Mr. Jack M	ton, Connec cCarthy	cticut 06424				R	eport Date: Ju	ne 29, 2006	
Project:	Soils PO# (002332								
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID: D: ate: Date:		9106-00 1642200 SE 18-MA 02-JUN Client 22.3%	002-007F 008 Y-06 J-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001		
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date Time Bat	ch Mtd
Rad Gamma Spec Ana	alysis		_							
Gamma,Solid–FSS G	AM & ALL FSS	5								
Actinium-228		0.728	+/-0.174	0.0585	+/-0.174	0.123	pCi/g	MJH1	06/19/06 2036 536	186 1
Americium-241	U	0.0662	+/-0.0842	0.0732	+/-0.0842	0.150	pCi/g			
Bismuth-212		0.503	+/-0.246	0.110	+/-0.246	0.231	pCi/g			
Bismuth-214		0.582	+/-0.0888	0.0274	+/-0.0888	0.0573	pCi/g			
Cesium-134	U	0.0324	+/-0.0315	0.0192	+/-0.0315	0.0401	pCi/g			
Cesium-137	Ū	0.381	+/-0.0456	0.0153	+/-0.0456	0.0321	pCi/g			
Cohalt-60		0.639	+/-0.0719	0.0156	+/-0.0719	0.0336	nCi/g			
Europium-152	I	-0.00433	+/-0.0445	0.037	+/-0.0445	0.0768	pCi/g			
Europium 152 Europium 154		-0.0143	+/-0.0575	0.0475	+/-0.0575	0.101	pCi/g			
Europium 154	U U	0.0145	+/-0.0536	0.0408	+/-0.0575	0.101	pCi/g			
Lead-212	U	0.0019	+/-0.0817	0.0716	+/-0.0817	0.0357	pCi/g			
Lead-214		0.600	+/-0.0017	0.0210	+/-0.0017	0.0546	pCi/g			
Manganasa-54	T	0.050	$\pm / -0.0792$	0.0205	$\pm /-0.0332$	0.0340	pCi/g			
Nichium-04	U	_0.0152	+/-0.0203	0.0170	+/-0.0203	0.0308	pCi/g			
Niobium 40	U	-0.00808	+/-0.010	0.0151	± -0.010	0.0273	pCl/g			
Potassium=40		12.9	+/-1.11	0.115	+/-1.11	0.253	pCi/g		•	
Kadium=226		0.582	+/-0.0888	0.0274	+/-0.0888	0.0573	pCl/g			
Silver-108m	U	-0.0107	+/-0.0149	0.0127	+/-0.0149	0.0264	pCi/g			
Thallium-208		0.238	+/-0.041	0.0144	+/-0.041	0.0301	pCı/g			
Rad Gas Flow Proport	ional Counting	g								
GFPC, Sr90, solid-A	LL FSS									
Strontium-90	U	0.00681	+/-0.0131	0.0131	+/-0.0131	0.0298	pCi/g	BXF1	06/25/06 1025 539	388 2
The following Prep M	ethods were p	erformed								
Method Des	cription				Analyst	Date	Time	e Prep Batc	h	
Dry Soil Prep Dry	Soil Prep GL-	RAD-A-0	21		AXP2	06/02/0	6 1920) 535666		
The following Analyti	cal Methods w	ere perfor	med							_
Method Dese	cription									
1 EM	L HASL 300, 4	.5.2.3								
2 EPA	905.0 Modifie	ed								
Surrogate/Tracer reco	overy Test				Recovery%	Acce	ptable Limits	5		
Carrier/Tracer Recovery	GFP	C, Sr90, so	lid-ALL FSS		81	(2	25%-125%)			

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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:	9106-0002-007F 164220008	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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
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- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
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Certificate of Analysis

Com Add	npany : ress :	Connecticut 362 Injun H	t Yankee A lollow Rd	tomic Power									
Con	tact:	East Hampt Mr. Jack M	on, Connec cCarthy	ticut 06424				R	eport Date: Ju	ne 29, 20	006		
Proj	ect:	Soils PO# 0	02332										
		Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: bate:		9106-0 1642200 SE 18-MA 02-JUN Client 20.9%	002-008F 009 Y-06 4-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date	Time Ba	tch N	Atd
Rad Gamma Spe	c Analy	sis											
- Gamma.Solid-H	ESS GAN	A & ALL FSS	5										
Actinium-228	00 0		0.574	+/-0.132	0.0514	+/-0.132	0.109	pCi/g	MJH1	06/20/0	06 0610 536	5186	1
Americium-24	1	U	-0.0538	+/-0.107	0.0921	+/-0.107	0.191	pCi/g					•
Bismuth-212	-	-	0.294	+/-0.232	0.109	+/-0.232	0.232	pCi/g					
Bismuth-214			0.388	+/-0.0771	0.0245	+/-0.0771	0.0518	pCi/g					
Cesium-134		U	0.0325	+/-0.040	0.0187	+/-0.040	0.0394	pCi/g					
Cesium-137			0.163	+/-0.0295	0.0127	+/-0.0295	0.0271	pCi/g					
Cobalt-60			0.370	+/-0.052	0.0129	+/-0.052	0.0283	pCi/g					
Europium-152		U	0.0234	+/-0.0428	0.0379	+/-0.0428	0.0792	pCi/g					
Europium-154		U	0.0429	+/-0.0592	0.0479	+/-0.0592	0.103	pCi/g					
Europium-155		U	0.0179	+/-0.0447	0.0428	+/-0.0447	0.0884	pCi/g					
Lead-212			0.584	+/-0.0721	0.0217	+/-0.0721	0.0451	pCi/g					
Lead-214			0.470	+/-0.0851	0.0247	+/-0.0851	0.0519	pCi/g					
Manganese-54		U	0.00381	+/-0.0184	0.0158	+/-0.0184	0.0334	pCi/g					
Niobium-94		U	-0.00332	+/-0.0142	0.012	+/-0.0142	0.0255	pCi/g					
Potassium-40			9.79	+/-0.887	0.112	+/-0.887	0.250	pCi/g					
Radium-226			0.388	+/-0.0771	0.0245	+/-0.0771	0.0518	pCi/g					
Silver-108m		U-	-0.000506	+/-0.0146	0.0131	+/-0.0146	0.0275	pCi/g					
Thallium-208			0.207	+/-0.0334	0.012	+/-0.0334	0.0255	pCi/g					
Rad Gas Flow Pr	oportio	nal Counting	g										
GFPC, Sr90, sol	lid-ALL	, FSS											
Strontium-90		U	0.00785	+/-0.0154	0.0156	+/-0.0154	0.035	pCi/g	BXF1	06/25/0	06 1025 539	388	2.
The following Pr	rep Met	hods were p	erformed					_					
Method	Descr	iption				Analyst	Date	Time	e Prep Batc	h			
Dry Soil Prep	Dry Se	oil Prep GL-	RAD-A-0	21		AXP2	06/02/0	06 1920	535666				
The following Ar	nalytica	l Methods w	ere perfor	med									
Method	Descri	ption											
1	EML I	HASL 300, 4	.5.2.3										
2	EPA 9	05.0 Modifie	d										
Surrogate/Trace	er recov	ery Test				Recovery%	Acce	eptable Limits	\$				

Carrier/Tracer Recovery GFPC, Sr90, solid-ALL FSS 75 (25%-125%)

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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:	9106-0002-008F 164220009	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Address :	362 Injun Hollow Rd		
	Company :	Connecticut Yankee Atomic Power		

Notes:

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- J Value is estimated
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- 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
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Certificate of Analysis

Company : Address :	Connecticu 362 Injun H	t Yankee A Iollow Rd	tomic Power									
Contact:	East Hampt Mr. Jack M	on, Connec cCarthy	cticut 06424				F	Report Date: Ju	ne 29, 2006	1		
Project:	Soils PO# 0	002332										
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: Date:		9106-0 164220 SE 18-MA 02-JUN Client 20.2%	002-009F 010 Y-06 J-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date 7	ime B	atch [Mtd
Rad Alpha Spec Analysi	s											
Alphaspec Am241, Cm,	Solid ALL FS	55										
Americium-241	U	0.127	+/-0.168	0.110	+/-0.169	0.318	pCi/g	MXA 1	06/22/06 1	119 54	10462	1
Curium-242	U	-0.0507	+/-0.0445	0.108	+/-0.0449	0.330	pCi/g					
Curium-243/244	U	0.0131	+/-0.136	0.138	+/-0.136	0.374	pCi/g	•				
Alphaspec Pu, Solid–Al	LL FSS											
Plutonium-238	U	-0.0153	+/-0.0792	0.0972	+/-0.0792	0.289	pCi/g	MXA 1	06/22/06 1	119 54	10464	2
Plutonium-239/240	U	-0.00835	+/-0.0164	0.0397	+/-0.0164	0.174	pCi/g					
Liauid Scint Pu241, Sol	id-ALL FSS						-					
Plutonium-241	U	10.1	+/-12.6	10.1	+/-12.7	21.2	pCi/g	MXA	06/23/06 2	2116 54	10465	3
Rad Gamma Spec Analy	sis											
Gamma,Solid–FSS GAl	M & ALL FSS	5										
Actinium-228		0.668	+/-0.149	0.0513	+/0.149	0.110	pCi/g	MJH1	06/20/06 0	917 53	36186	4
Americium-241	U	-0.0183	+/-0.0763	0.0635	+/-0.0763	0.131	pCi/g					
Bismuth-212		0.708	+/0.214	0.101	+/-0.214	0.216	pCi/g					
Bismuth-214		0.520	+/-0.0732	0.025	+/-0.0732	0.0529	pCi/g					
Cesium-134	U	0.0398	+/-0.035	0.021	+/-0.035	0.044	pCi/g					
Cesium-137		0.184	+/-0.045	0.0138	+/-0.045	0.0294	pCi/g					
Cobalt-60		0.231	+/-0.0461	0.0144	+/-0.0461	0.0316	pCi/g					
Europium 154	U	-0.0209	+/-0.0407	0.0333	± -0.0407	0.0743	pCi/g					
Europium-154		0.00108	+/-0.0613	0.0405	+/-0.048	0.0333	pCi/g					
Lead-212	01	0.664	+/-0.0487	0.0199	+/-0.0487	0.0413	nCi/g					
Lead-214		0.524	+/-0.0743	0.0252	+/-0.0743	0.0528	pCi/g					
Manganese-54	U	-0.00262	+/-0.0182	0.0158	+/-0.0182	0.0335	pCi/g					
Niobium-94	Ū	0.00538	+/-0.0155	0.0134	+/-0.0155	0.0283	pCi/g					
Potassium-40		10.2	+/-0.675	0.122	+/-0.675	0.271	pCi/g					
Radium-226		0.520	+/-0.0732	0.025	+/-0.0732	0.0529	pCi/g					
Silver-108m	U	0.0034	+/-0.0143	0.0128	+/-0.0143	0.0268	pCi/g					
Thallium-208		0.216	+/-0.0341	0.0145	+/-0.0341	0.0306	pCi/g					
Rad Gas Flow Proportio	nal Counting	g										
GFPC, Sr90, solid–ALL	L FSS											
Strontium-90	U	0.00294	+/-0.017	0.0184	+/-0.017	0.0412	pCi/g	BXF1	06/25/06 1	025 53	9388	5
Rad Liquid Scintillation	Analysis	FCC										
LOC, Irnium Disi, Solia	E HIDZ,ALL	1.22										

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Report Date: June 29, 2006

Certificate of Analysis

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

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

Client San Sample ID	nple ID:):		9106-00 1642200	002-009F 010		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	Date	Time	Batch	Mtd
Analysis											
-HTD2,ALL	FSS										
U	-2.65	+/-7.23	6.22	+/-7.23	13.1	pCi/g	NXP1	06/17/06	1658	535984	6
All,FSS											
U	-0.0114	+/-0.0887	0.0746	+/-0.0887	0.151	pCi/g	ATH2	06/16/06	0757	536336	7
-ALL FSS											
U	5.52	+/-16.7	12.3	+/-16.7	25.9	pCi/g	SLN1	06/21/06	0902	538969	8
-ALL FSS											
U	4.87	+/-6.73	5.51	+/-6.74	11.3	pCi/g	SLN1	06/28/06	0108	541000	9
-ALL FSS											
U	0.0368	+/-0.224	0.187	+/-0.224	0.386	pCi/g	SXE1	06/14/06	1804	536314	10
	Client San Sample IE Qualifier Analysis -HTD2,ALL U All,FSS U -ALL FSS U -ALL FSS U -ALL FSS U	Client Sample ID: Sample ID: Qualifier Result Analysis -HTD2,ALL FSS U -2.65 All,FSS U -0.0114 -ALL FSS U 5.52 -ALL FSS U 4.87 -ALL FSS U 0.0368	Client Sample ID: Qualifier Result Uncertainty Analysis - - -HTD2,ALL FSS U -2.65 +/-7.23 All,FSS U -0.0114 +/-0.0887 -ALL FSS U 5.52 +/-16.7 -ALL FSS U 4.87 +/-6.73 -ALL FSS U 4.87 +/-6.73 -ALL FSS U 4.87 +/-0.224	Client Sample ID: 9106-00 Sample ID: 1642200 Qualifier Result Uncertainty LC Analysis -HTD2,ALL FSS U -2.65 +/-7.23 6.22 All,FSS U -0.0114 +/-0.0887 0.0746 -ALL FSS U 5.52 +/-16.7 12.3 -ALL FSS U 4.87 +/-6.73 5.51 -ALL FSS U 0.0368 +/-0.224 0.187	Client Sample ID: $9106-0002-009F$ 164220010QualifierResultUncertaintyLCTPUAnalysis-HTD2,ALL FSSU-2.65+/-7.236.22+/-7.23All,FSSU-0.0114+/-0.08870.0746+/-0.0887-ALL FSSU5.52+/-16.712.3+/-16.7-ALL FSSU4.87+/-6.735.51+/-6.74-ALL FSSU0.0368+/-0.2240.187+/-0.224	Client Sample ID: 9106-0002-009F Sample ID: 9106-0002-009F Qualifier Result Uncertainty LC TPU MDA Analysis $-HTD2,ALL FSS$ U -2.65 $+/-7.23$ 6.22 $+/-7.23$ 13.1 All, FSS U -0.0114 $+/-0.0887$ 0.0746 $+/-0.0887$ 0.151 -ALL FSS U 5.52 $+/-16.7$ 12.3 $+/-16.7$ 25.9 -ALL FSS U 4.87 $+/-6.73$ 5.51 $+/-6.74$ 11.3 -ALL FSS U 0.0368 $+/-0.224$ 0.187 $+/-0.224$ 0.386	Client Sample ID: $9106-0002-009F$ Project: Client ID: Vol. Recv.:QualifierResultUncertaintyLCTPUMDAUnitsAnalysis-HTD2,ALL FSSU-2.65+/-7.236.22+/-7.2313.1pCi/gAll,FSSU-0.0114+/-0.08870.0746+/-0.08870.151pCi/g-ALL FSSU5.52+/-16.712.3+/-16.725.9pCi/g-ALL FSSU4.87+/-6.735.51+/-6.7411.3pCi/g-ALL FSSU0.0368+/-0.2240.187+/-0.2240.386pCi/g	Client Sample ID: $9106-0002-009F$ 164220010 Project: Client ID: Vol. Recv.:YANK01204 YANK001QualifierResultUncertaintyLCTPUMDAUnitsDFAnalystAnalysis-HTD2,ALL FSSU-2.65+/-7.236.22+/-7.2313.1pCi/gNXP1All,FSSU-0.0114+/-0.08870.0746+/-0.08870.151pCi/gATH2-ALL FSSU5.52+/-16.712.3+/-16.725.9pCi/gSLN1-ALL FSSU4.87+/-6.735.51+/-6.7411.3pCi/gSLN1-ALL FSSU0.0368+/-0.2240.187+/-0.2240.386pCi/gSXE1	Client Sample ID:9106-0002-009F 164220010Project: Client ID: Vol. Recv.:YANK01204 YANK001QualifierResultUncertaintyLCTPUMDAUnitsDFAnalyst DateAnalysis-HTD2,ALL FSS U -2.65+/-7.236.22+/-7.2313.1pCi/gNXP106/17/06 UI, FSS U -0.0114+/-0.08870.0746+/-0.08870.151pCi/gATH206/16/06-ALL FSS U 5.52+/-16.712.3+/-16.725.9pCi/gSLN106/21/06-ALL FSS U 4.87+/-6.735.51+/-6.7411.3pCi/gSLN106/28/06-ALL FSS U 0.0368+/-0.2240.187+/-0.2240.386pCi/gSXE106/14/06	Client Sample ID: $9106-0002-009F$ 164220010 Project: Client ID: Vol. Recv.:YANK01204 YANK001QualifierResultUncertaintyLCTPUMDAUnitsDFAnalyst DateTimeAnalysis-HTD2,ALL FSSU-2.65+/-7.236.22+/-7.2313.1pCi/gNXP106/17/061658 <i>UI</i> -2.65+/-7.236.22+/-7.2313.1pCi/gNXP106/17/061658 <i>UI</i> -0.0114+/-0.08870.0746+/-0.08870.151pCi/gATH206/16/060757-ALL FSSU5.52+/-16.712.3+/-16.725.9pCi/gSLN106/21/060902-ALL FSSU4.87+/-6.735.51+/-6.7411.3pCi/gSLN106/28/060108-ALL FSSU0.0368+/-0.2240.187+/-0.2240.386pCi/gSXE106/14/061804	Client Sample ID: $9106-0002-009F$ Project: Client ID: Vol. Recv.:YANK01204 YANK001QualifierResultUncertaintyLCTPUMDAUnitsDFAnalyst DateTime BatchAnalysis-HTD2,ALL FSSU-2.65+/-7.236.22+/-7.2313.1pCi/gNXP106/17/061658535984 $411,FSS$ U-0.0114+/-0.08870.0746+/-0.08870.151pCi/gATH206/16/060757536336-ALL FSSU5.52+/-16.712.3+/-16.725.9pCi/gSLN106/21/060902538969-ALL FSSU4.87+/-6.735.51+/-6.7411.3pCi/gSLN106/28/060108541000-ALL FSSU0.0368+/-0.2240.187+/-0.2240.386pCi/gSXE106/14/061804536314

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AXP2	06/02/06	1920	535666

The following Analytical Methods were performed Method Description

Michiga	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	97	(15%-125%)	
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	92	(15%-125%)	
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	65	(25%-125%)	
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	69	(25%-125%)	
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	98	(15%-125%)	
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Certificate of Analysis

Company : Address :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power						
Contact:	East Hampto Mr. Jack Mo	on, Connec Carthy	cticut 06424				R	eport Date: June 29, 20	006
Project:	Soils PO# 0	02332							
	Client Sam Sample ID	nple ID: :		9106-000 16422001	02-009F 10		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
Carrier/Tracer Recovery	Liqu	id Scint Ni	63, Solid-ALL	FS	67		(25%-125%)		
Carrier/Tracer Recovery	Liqu	id Scint To	99, Solid-ALL	FS	80		(15%-125%)		

Notes:

The Oualifiers in this report are defined as follows :

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

J Value is estimated

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

R Sample results are rejected

- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- QC Samples were not spiked with this compound Y
- \wedge 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

C A	ompany : .ddress :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power		·					
C	ontact:	East Hampte Mr. Jack Me	on, Connec cCarthy	eticut 06424				R	eport Date: Jur	ne 29, 20	006
Р	roject:	Soils PO# 0	02332								
		Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: ate:		9106-00 1642200 SE 18-MA 02-JUN Client 13.5%	002-010F 011 Y-06 I-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch Mtd
Rad Gamma S	pec Analy	sis									
Gamma,Solia	-FSS GA	M & ALL FSS	1								
Actinium-2	28		0.817	+/-0.139	0.0579	+/-0.139	0.125	pCi/g	MJH1	06/20/0	06 1008 536186 1
Americium-	241	U	0.0037	+/-0.0906	0.0728	+/-0.0906	0.150	pCi/g			
Bismuth-21	2		0.765	+/-0.247	0.131	+/-0.247	0.279	pCi/g			
Bismuth-21	4		0.647	+/-0.103	0.0322	+/-0.103	0.0681	pCi/g			
Cesium-134		U	0.0149	+/-0.0278	0.0208	+/0.0278	0.0442	pCi/g			
Cesium-137	1		0.0661	+/0.0378	0.0167	+/-0.0378	0.0356	pCi/g			
Cobalt-60			0.238	+/-0.0552	0.0158	+/0.0552	0.0351	pCi/g			
Europium-1	52	U	-0.0245	+/-0.0532	0.0443	+/-0.0532	0.0928	pCi/g			
Europium-1	54	U	-0.0219	+/-0.0613	0.0508	+/-0.0613	0.111	pCi/g			
Europium-1	55	U	0.0559	+/-0.0498	0.0482	+/-0.0498	0.0993	pCi/g			
Lead-212			0.760	+/-0.0605	0.026	+/-0.0605	0.0539	pCi/g			
Lead-214			0.736	+/-0.093	0.0315	+/-0.093	0.066	pCi/g			
Manganese-	54	U	-0.0136	+/-0.0204	0.0163	+/-0.0204	0.035	pCi/g			
Niobium-94		U	0.0204	+/-0.0198	0.0163	+/-0.0198	0.0345	pCi/g			
Potassium-4	.0		10.5	+/0.808	0.134	+/-0.808	0.302	pCi/g			
Radium-226)		0.647	+/-0.103	0.0322	+/-0.103	0.0681	pCi/g			
Silver-108m		, U	-0.004/1	+/-0.018	0.0148	+/-0.018	0.0312	pCi/g			
Inallium-20	18 Dronoutio	nol Counting	0.285	+/-0.048	0.017	+/-0.048	0.036	pC1/g			
Rad Gas Flow	rroportio		5								
GFPC, Sr90, Strontium–9	solid-ALL 0	, FSS U	-0.0106	+/0.0136	0.0176	+/-0.0136	0.0392	pCi/g	BXF1	06/25/0	6 1025 539388 2
The following	Prep Met	hods were pe	erformed								
Method	Descr	iption				Analyst	Date	Time	Prep Batch	1	
Dry Soil Prep	Dry S	oil Prep GL-l	RAD-A-0	21		AXP2	06/02/0	06 1920	535666		
The following	Analytica Descri	l Methods we	ere perfori	med							
		P-101									
1	EML I	HASL 300, 4.	5.2.3								
2	EPA 9	05.0 Modifie	d								
Surrogate/Tra	acer recov	ery Test				Recovery%	Acce	ptable Limits	;		

GFPC, Sr90, solid-ALL FSS 72 Carrier/Tracer Recovery (25%-125%)

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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:	9106-0002-010F 164220011	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
Project:	Soils PO# 002332		
Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
Company Address :	: Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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

Cor Ade	mpany : dress :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power								
Cor	ntact:	East Hampt Mr. Jack Me	on, Connec cCarthy	ticut 06424				Re	eport Date: Jur	ne 29, 20	06	
	jeet.	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): hte: ate:		9106-00 1642200 SE 19-MA 02-JUN Client 18%	002-011F 012 Y-06 I-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch	Mtd
Rad Gamma Sp	ec Analy	sis	·									
Gamma Solid—	ESS GA	M& ALLESS	2									
Actinium-228	105 0/11	<i>n</i> a <i>nEE</i> 1 65	0.555	+/-0.154	0.0668	+/-0 154	0.142	nCi/g	MIH1	06/20/0	6 1009 53618	6 1
Americium-2	41	П	-0.0836	+/-0.104	0.0000	+/-0.104	0.138	pCi/g	1413111	00/20/0	0 1009 55010	1 00
Bismuth-212		U	0.0030	+/-0.209	0 114	+/-0.209	0.158	pCi/g				
Bismuth-214			0.411	+/-0.0669	0.0275	+/-0.0669	0.0584	nCi/g				
Cesium-134		IП	0.00	+/-0.0507	0.0177	+/-0.0507	0.0378	pCi/g				
Cesium~137		01	0.247	+/-0.0433	0.0191	+/-0.0433	0.0402	pCi/g				
Cobalt-60			0.526	+/-0.0598	0.014	+/-0.0598	0.0311	nCi/g				
Europium-152	2	U	0.0154	+/-0.0455	0.0415	+/-0.0455	0.0868	pCi/g				
Europium-154	1	Ŭ	0.0336	+/-0.0642	0.0509	+/-0.0642	0.110	pCi/g				
Europium-15	5	UI	0.00	+/-0.0713	0.0413	+/-0.0713	0.0853	pCi/g				
Lead-212		01	0.656	+/-0.0521	0.0235	+/-0.0521	0.0487	pCi/g				
Lead-214			0.634	+/-0.078	0.0282	+/-0.078	0.059	pCi/g				
Manganese-54	4	U	0.0135	+/-0.022	0.0192	+/-0.022	0.0406	pCi/g				
Niobium-94		Ū	0.0146	+/-0.0161	0.0146	+/-0.0161	0.031	pCi/g				
Potassium-40		-	11.1	+/-0.820	0.123	+/-0.820	0.276	pCi/g			•	
Radium-226			0.547	+/-0.0669	0.0275	+/-0.0669	0.0584	pCi/g				
Silver-108m		U	0.00368	+/-0.0156	0.014	+/-0.0156	0.0294	pCi/g				
Thallium-208			0.227	+/-0.0428	0.0153	+/-0.0428	0.0324	pCi/g				
Rad Gas Flow P	roportio	nal Counting	Į					1 0				
GEPC SyOn so	Jid ALI	FSS	•									
Strontium-90	.nu 7152	U	0.0195	+/-0.0167	0.0147	+/-0.0167	0.0333	pCi/g	BXF1	06/25/0	6 1025 53938	82
The following P	rep Met	hods were po	erformed									
Method	Descr	iption				Analyst	Date	Time	Prep Batcl	h		_
Dry Soil Prep	Dry S	oil Prep GL-	RAD-A-0	21		AXP2	06/02/0	06 1920	535666			
The following A	nalytica	l Methods w	ere perfor	ned								
Method	Descri	iption										
1	EML	HASL 300, 4.	5.2.3						<u> </u>			
2	EPA 9	05.0 Modifie	d									
Surrogate/Trac	er recov	ery Test				Recovery%	Acce	ptable Limits				

1 2

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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:	9106-0002-011F 164220012	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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

Certificate of Analysis

,

(Company : Address :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power							
	Contact:	East Hampt Mr. Jack M	on, Connec cCarthy	ticut 06424				Re	eport Date: Ju	ne 29, 20	006
1	Project:	Soils PO# 0	02332								
		Client San Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): hte: ate:		9106-00 1642200 SE 19-MA 02-JUN Client 18.5%	002-012F 013 Y-06 I-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time Batch Mte
Rad Gamma	Spec Analy	sis									
Gamma,Soli	d–FSS GA	M & ALL FSS	7								
Actinium-2	228		0.650	+/-0.151	0.0574	+/-0.151	0.122	pCi/g	MJH1	06/20/0	6 1009 536186 1
Americium	-241	U	-0.126	+/-0.0935	0.0727	+/-0.0935	0.149	pCi/g			
Bismuth-2	12		0.513	+/-0.177	0.112	+/-0.177	0.238	pCi/g			
Bismuth-2	14		0.542	+/-0.0844	0.0265	+/-0.0844	0.0561	pCi/g			
Cesium-13	4	U	0.0281	+/-0.0349	0.0197	+/-0.0349	0.0416	pCi/g			
Cesium-13	7		0.175	+/-0.0364	0.0164	+/-0.0364	0.0346	pCi/g			
Cobalt-60			0.118	+/-0.0405	0.0174	+/-0.0405	0.0376	pCi/g			
Europium-	152	U	0.0354	+/-0.0583	0.0455	+/-0.0583	0.0944	pCi/g			
Europium-	154	U	-0.0546	+/-0.0598	0.0448	+/-0.0598	0.0974	pCi/g			
Europium-	155	U	0.0313	+/-0.0553	0.0511	+/-0.0553	0.105	pCi/g			
Lead-212			0.757	+/-0.0554	0.0264	+/-0.0554	0.0545	pCi/g			
Lead-214			0.605	+/-0.0866	0.0296	+/-0.0866	0.0618	pCi/g			
Manganese	-54	U	-0.0096	+/-0.021	0.0174	+/-0.021	0.0368	pCi/g			
Niobium-9	4	U	0.00277	+/-0.0174	0.0152	+/-0.0174	0.032	pCi/g			
Potassium-	40		10.6	+/-0.817	0.140	+/-0.817	0.309	pCi/g			
Radium-22	6		0.542	+/0.0844	0.0265	+/-0.0844	0.0561	pCi/g			
Silver-108	n	U	0.00453	+/-0.0174	0.0149	+/-0.0174	0.0311	pCi/g			
Thallium-2	08		0.291	+/-0.0438	0.0152	+/-0.0438	0.0321	pCi/g			
Rad Gas Flow	/ Proportio	nal Counting	ç								
GFPC. Sr90	. solid–ALL	FSS									
Strontium-	90	U	-0.00447	+/-0.0108	0.0132	+/-0.0108	0.0297	pCi/g	BXF1	06/26/0	6 2133 539388 2
The followin	g Prep Met	hods were p	erformed								
Method	Descr	iption				Analyst	Date	Time	Prep Batc	h	
Dry Soil Prep	Dry S	oil Prep GL-	RAD-A-0	21		AXP2	06/02/0	6 1920	535666		
The following	7 Analytica	l Methods w	ere perfor	med							
Method	Descr	iption	ere periori						, , , , , , , , , , , , , , , , , , ,		
1	EML	HASL 300 4	5.2.3					_			
2	FPA C	05 0 Modifie	d								
<u>ت</u>			~								

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)	

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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:	9106-0002-012F 164220013	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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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- 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

Certificate of Analysis

Comp. Addre	any : ss :	Connecticu 362 Injun H	t Yankee A Iollow Rd	tomic Power								
Conta	ct:	East Hampt Mr. Jack M	ton, Connec cCarthy	eticut 06424				Re	port Date: Jur	ne 29, 200	5	
Projec	:t:	Soils PO# (002332									
		Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID: D: ate: Date:		9106-00 1642200 SE 19-MA 02-JUN Client 24.2%	002-013F 014 Y-06 I-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	Analys	is										
Gamma Solid–FS	'S GAM	 & ALLES	5									
Actinium-228	0	a nee roo	0.688	+/-0.198	0.0782	+/-0.198	0.167	pCi/g	MJH1	06/20/06	1010 536186	1
Americium-241		U	0.0271	+/-0.0326	0.0281	+/-0.0326	0.0577	pCi/g		00/20/00	1010 220100	•
Bismuth-212		U	0.421	+/-0.302	0.135	+/-0.302	0.289	pCi/g				
Bismuth-212			0.662	+/-0.100	0.0365	+/-0.100	0.0772	pCi/g				
Cesium-134		U	0.0486	+/-0.0403	0.0255	+/-0.0403	0.054	pCi/g				
Cesium-137		Ŭ	0.0243	+/-0.052	0.0235	+/-0.052	0.0496	pCi/g				
Cobalt-60		_	0.151	+/-0.0486	0.0224	+/-0.0486	0.0488	pCi/g				
Europium-152		U	-0.02	+/-0.0504	0.044	+/-0.0504	0.0925	pCi/g				
Europium-154		Ũ	0.00563	+/-0.0667	0.057	+/-0.0667	0.125	pCi/g				
Europium-155		Ū	0.0391	+/-0.051	0.0471	+/-0.051	0.0968	pCi/g				
Lead-212			0.723	+/-0.0651	0.0256	+/-0.0651	0.0532	pCi/g				
Lead-214			0.640	+/-0.0947	0.0361	+/-0.0947	0.0755	pCi/g				
Manganese-54		UI	0.00	+/-0.0774	0.0219	+/-0.0774	0.0467	pCi/g				
Niobium-94		Ū	0.00857	+/-0.0228	0.0198	+/-0.0228	0.0418	pCi/g				
Potassium-40			10.1	+/-0.836	0.190	+/-0.836	0.419	pCi/g				
Radium-226			0.662	+/-0.100	0.0365	+/-0.100	0.0772	pCi/g				
Silver-108m		U	0.00113	+/-0.0192	0.0169	+/-0.0192	0.0356	pCi/g				
Thallium-208		-	0.289	+/-0.054	0.0193	+/-0.054	0.0408	pCi/g				
Rad Gas Flow Pror	ortion	al Counting	g					F 8				
CEPC Sr00 solid	- 411	F55	8									
Strontium-90		U-	-0.000497	+/0.0108	0.0122	+/-0.0108	0.0276	pCi/g	BXF1	06/26/06	2133 539388	2
The following Pre	p Meth	ods were p	erformed									
Method	Descrip	ption				Analyst	Date	Time	Prep Batel	1		
Dry Soil Prep	Dry So	il Prep GL-	RAD-A-0	21		AXP2	06/02/0	6 1920	535666			
The following Ana	lytical	Methods w	ere perfori	med								
Method I	Descrip	otion										
1 1	EML H	ASL 300, 4	.5.2.3									
2 1	EPA 90	5.0 Modifie	ed									
Surrogate/Tracer	recovei	ry Test				Recovery%	Acce	otable Limits				

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Parameter	T	Quaimer	Result	Uncertainty			MDA	Units	DF Analyst	Date Time Batch Mtd
		Outlifer	Desult	T T 4 • . 4	1.6					
		Client Sam Sample ID	ple ID:		9106-000 16422001	02-013F 14		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
	Project:	Soils PO# 00	02332							
	Contact:	East Hampto Mr. Jack Mc	on, Connec Carthy	ticut 06424				H	Report Date: June	29, 2006
	Company : Address :	Connecticut 362 Injun He	Yankee A ollow Rd	tomic Power						

81

(25%-125%)

Carrier/Tracer Recovery

Notes:

The Qualifiers in this report are defined as follows :

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GFPC, Sr90, solid-ALL FSS

- < Result is less than value reported
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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

Certificate of Analysis

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Compare Address	ny : Connect s : 362 Inju	icut Yankee A n Hollow Rd	Atomic Power								
Contact	East Har : Mr. Jack	npton, Conne McCarthy	cticut 06424				R	eport Date: Jur	ne 29, 2006	Ĵ.	
Project:	Soils PO	# 002332									
	Client S Sample Matrix: Collect Receive Collect Moistu	Sample ID: ID: Date: Date: Date: or: re:		9106-0 164220 SE 19-MA 02-JUN Client 10.5%	002-014F 015 Y-06 √-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifi	er Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date 7	Fime Batch	 Mtd
Rad Gamma Spec A	nalysis								~~ ~		
Gamma,Solid–FSS	GAM & ALL	FSS									
Actinium-228		0.636	+/0.149	0.0475	+/0.149	0.103	pCi/g	MJH1	06/20/06	1018 536186	1
Americium-241		U 0.0288	+/-0.0915	0.0757	+/-0.0915	0.156	pCi/g				•
Bismuth-212		0.739	+/-0.253	0.101	+/-0.253	0.216	pCi/g				
Bismuth-214		0.644	+/-0.0996	0.0268	+/-0.0996	0.0567	pCi/g				
Cesium-134		U 0.0302	+/-0.0267	0.0188	+/-0.0267	0.0398	pCi/g				
Cesium-137	τ	Л 0.00	+/-0.0443	0.0147	+/-0.0443	0.0312	nCi/g				
Cobalt-60		U 0.00146	+/-0.0214	0.0183	+/-0.0214	0.0395	nCi/g				
Europium-152		U = 0.00893	+/-0.0433	0.0366	+/-0.0433	0.0767	pCi/g				
Europium-154		U = -0.0447	+/-0.0542	0.0418	+/-0.0542	0.0916	nCi/g				
Europium-155		U 0.0758	+/-0.0609	0.0408	+/-0.0609	0.0843	nCi/g				
Lead-212		0.828	+/-0.0856	0.0225	+/-0.0856	0.0467	nCi/g				
Lead-212		0.740	+/-0.103	0.0245	+/0 103	0.0515	nCi/g				
Manganese-54	T	11 0.00	+/-0.0228	0.0149	+/-0.0228	0.0318	nCi/g				
Niobium-94		U 0.0196	+/-0.0261	0.0143	+/-0.0261	0.0303	nCi/g	•			
Potassium-40		10.4	+/-1.03	0.119	+/-1.03	0.268	nCi/g				
Radium-226		0 644	+/-0.0996	0.0268	+/-0.0996	0.0567	nCi/g				
Silver-108m		U = -0.0088	+/-0.0138	0.0119	+/-0.0138	0.0252	pCi/g				
Thallium-208		0.249	+/-0.0461	0.0144	+/-0.0461	0.0306	pCi/g				
Rad Gas Flow Prono	rtional Count	ting	.,	0.0111	.,	0.0500	P011B				
Strontium-90	ALLTSS	U -0.00235	+/~0.016	0.0184	+/-0.016	0.0406	pCi/g	BXF1	06/25/06 1	026 539388	2
The following Prep	Methods wer	e performed									
Method D	escription				Analyst	Date	Time	e Prep Batch	1		
Dry Soil Prep D	ry Soil Prep G	L-RAD-A-()21		AXP2	06/02/0	1920) 535666			
The following Analy	tical Methods	were perfor	med								
Method D	escription						·······				
1 Fi	ML HASL 300	. 4.5.2.3	·····								
2 E	PA 905.0 Mod	ified									
Surrogate/Tracer re	ecovery T	est			Recovery%	Acce	eptable Limits	5			
Carrier/Tracer Recove	ery G	FPC, Sr90, so	olid-ALL FSS		79	(2	25%-125%)				

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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:	9106-0002-014F 164220015	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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 $\pm/-RL$. Concentrations are $\leq 5X$ the RL
- h Preparation or preservation holding time was exceeded

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Compa Addre	any : Con ss : 362	necticut Injun H	t Yankee A ollow Rd	tomic Power								
Contac	East ct: Mr.	t Hampt Jack M	on, Connec cCarthy	ticut 06424				R	eport Date:	June 29, 2	.006	
Projec	t: Soil	s PO# 0	02332									
	Clia Sar Ma Col Rec Col Mo	ent San nple ID trix: llect Da ceive D llector: bisture:	nple ID:): ate: ate:		9106-00 1642200 SE 19-MA 02-JUN Client 13%	002-015F 017 Y-06 J-06		Project: Client ID: Vol. Recv.:	YANK012 YANK00	204 1		
Parameter	Qu	alifier	Result	Uncertainty	LC	TPU	MDA	Units	DF An	alyst Date	Time Batch	1 Mtd
Rad Gamma Spec	Analysis											
Gamma,Solid-FS	S GAM & A	ALL FSS	3									
Actinium-228			0.820	+/-0.214	0.060	+/-0.214	0.129	pCi/g	MJ	H1 06/20/	06 1019 53618	36 1
Americium-241		U	0.0169	+/-0.0299	0.0251	+/-0.0299	0.0514	pCi/g				
Bismuth-212			0.473	+/-0.305	0.131	+/-0.305	0.280	pCi/g				
Bismuth-214			0.791	+/-0.135	0.0338	+/-0.135	0.0713	pCi/g				
Cesium-134		UI	0.00	+/-0.0379	0.0247	+/-0.0379	0.0521	pCi/g				
Cesium-137			0.116	+/-0.0374	0.0202	+/-0.0374	0.0427	pCi/g				
Cobalt-60			0.0507	+/-0.0319	0.0175	+/-0.0319	0.0385	pCi/g				
Europium-152		U	-0.0307	+/0.0547	0.047	+/-0.0547	0.0979	pCi/g				
Europium-154		Ū	0.075	+/-0.0721	0.0658	+/-0.0721	0.141	nCi/g				
Europium-155		Ũ	0.0281	+/-0.0479	0.0433	+/-0.0479	0.089	nCi/g				
Lead-212		U	0.886	+/-0.115	0.0252	+/-0.115	0.0521	pCi/g				
Lead-214			0.771	+/-0.119	0.0334	+/-0.119	0.0697	pCi/g				
Manganese-54		U	0.0219	+/0.0304	0.0173	+/-0.0304	0.0371	pCi/g				
Niobium-94		U U	-0.0027	+/-0.0201	0.0175	+/-0.0201	0.0352	pCi/g				
Potassium-40		U	11.9	+/-111	0 154	+/-111	0.342	pCi/g				
Radium726			0 791	+/-0.135	0.0338	+/-0.135	0.0713	pCi/g				
Silver-108m		IJ	0.00556	+/-0.0176	0.0155	+/-0.0176	0.0326	pCi/g				
Thallium-208		U	0.000000	+/-0.056	0.0135	+/-0.056	0.0394	pCi/g				
Rad Gas Flow Prop	ortional C	ounting	0.252	., 0.000	0.0107	0.000	0.0574	peng				
CEPC Sell solid	- 111 ESS		,									
Strontium-90	ALL I 55	U	0.00455	+/-0.0169	0.0179	+/-0.0169	0.0405	pCi/g	BX	F1 06/25/0)6 1120 53938	8 2
The following Prep	p Methods	were po	erformed									
Method	Description	1				Analyst	Date	Time	Prep B	latch		•
Dry Soil Prep	Dry Soil Pr	ep GL-	RAD-A-0	21		AXP2	06/02/0)6 1920	535666	5		-

The following Analytical Methods were performed

Method	Description				
1	EML HASL	, 300, 4.5.2.3			
2	EPA 905.0 I	Modified			
Surrogate/Ti	acer recovery	Test	Recovery%	Acceptable Limits	
Carrier/Tracer	Recovery	GFPC, Sr90, solid-ALL FSS	64	(25%-125%)	

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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:	9106-0002-015F 164220017	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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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

Certificate of Analysis

C A	ompany : ddress :	Connecticut 362 Injun H	t Yankee A Iollow Rd	tomic Power								
С	ontact:	East Hampt Mr. Jack M	on, Connec cCarthy	cticut 06424				R	eport Date:	June 29, 20	006	
P	roject:	Soils PO# 0	02332									
		Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: ate:		9106-0 164220 SE 19-MA 02-JUN Client 19.5%	002-016F 018 Y-06 J-06		Proiect: Client ID: Vol. Recv.:	YANK0120 YANK001)4		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Anal	yst Date	Time Ba	tch Mtd
Rad Gamma S	pec Analy	rsis										
Gamma.Solid	- FSS GAI	M & ALL FSS	5									
Actinium-22	28		0.973	+/-0.156	0.0312	+/-0.156	0.0651	pCi/g	MIH	1 06/20/0	06 1019 536	5186 1
Americium-	241	U	0.0182	+/0.0728	0.0685	+/-0.0728	0 140	pCi/g			50 1017 550	/100 1
Bismuth-21	2	Ũ	0.682	+/-0.202	0.0693	+/-0.202	0.144	pCi/g				
Bismuth-21	4		0.800	+/-0.0822	0.0174	+/-0.0822	0.036	pCi/g				
Cesium-134	•	III	0.00	+/-0.0173	0.0121	+/-0.0173	0.0249	nCi/g				
Cesium-137		01	0.0731	+/-0.0225	0.00992	+/-0.0225	0.0205	nCi/g				
Cobalt-60			0.0983	+/-0.0254	0.0104	± -0.0254	0.0218	pCi/g				
Europium-1	52	U	0.0105	+/-0.0316	0.0267	+/-0.0316	0.0546	pCi/g				
Europium1	54	Ŭ	0.0338	+/-0.0361	0.0305	+/-0.0361	0.0637	nCi/g				
Europium-1	55	ці III	0.00	+/-0.0463	0.0294	+/-0.0463	0.0598	nCi/g				
Lead-712	00	U1	1.01	+/-0.102	0.0157	+/-0.102	0.0321	pCi/g				
Lead-214			0.929	+/-0.0992	0.0187	+/-0.0992	0.0383	nCi/g				
Manganese-	54	U	0.00934	+/-0.0177	0.00934	+/-0.0177	0.0194	nCi/g				
Niohium-94		Ŭ	0.00509	+/-0.0109	0.00939	+/-0.0109	0.0194	nCi/g				
Potassium-4	0	0	10.5	+/-0.809	0.0876	+/-0.809	0.185	pCi/g				
Radium-226			0.800	+/-0.0822	0.0174	+/-0.0822	0.036	pCi/g				
Silver-108m		U	-0.00238	+/-0.00976	0.00854	+/-0.00976	0.0176	pCi/g				
Thallium-20	8	-	0.283	+/-0.0333	0.00953	+/-0.0333	0.0197	pCi/g				
Rad Gas Flow	Proportio	nal Counting	2					1 - 8				
CEPC Sr00	colid_AII	FSS	<i>.</i>									
Strontium-9	0	U	0.00915	+/-0.0171 .	0.0173	+/-0.0171	0.0389	pCi/g	BXF	1 06/25/0)6 1053 539	388 2
The following	Prep Met	hods were p	erformed			Analyst	Data	Timo	Drop Pa	tah		
Dra Sail Prop	Desci	oil Drop CI		21			Date 06/02//	1020	525666			
by son ricp	DIYS	on ricp OL ⁻ .		£1		/ MI 2	00/02/0	1720	555000			
The following	Analytica Doco-	l Methods w	ere perfor	med								
Method	Descri	Prion.				· / · · · · · · · · · · · · · · ·						
1	EML I	HASL 300, 4	.5.2.3									
2	EPA 9	05.0 Modifie	d									

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	69	(25%-125%)

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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:	9106-0002-016F 164220018	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: June 29, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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



Client ·	Connecticut	t Vankee Atomic Power	<u>QC</u>	C Su	mmary			Report I	Date: June 29, 2006	
chent :	362 Injun H	Iollow Rd							Page 1 of 9	
Contact:	East Hampt Mr. Jack M	ton, Connecticut lcCarthy								
Workorder:	164220									
Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Alpha Spec Batch 5	40462									
QC120111759	8 164220002	DUP								
Americium-241		U	-0.0378	U	-0.106	pCi/g	95		(0% - 100%) ЛХА1	06/24/06 08:10
		Uncert:	+/-0.0665		+/-0.182					
Curium 242		TPU:	+/-0.0666	TI	+/-0.183	-Cila	200		(00/ 1000/)	
Curium-242		U Uncert:	+/_0.0752	U	+/-0 147	pci/g	200		(0% - 100%)	
		TPI I-	+/-0.0752		+/-0.147					
Curium-243/244		110.	0.0331	U	0.102	pCi/g	102		(0% - 100%)	
		Uncert:	+/-0.0649		+/-0.270	1 0			(
		TPU:	+/-0.065		+/-0.270					
QC120111760	0 LCS									
Americium-241		13.6			10.3	pCi/g		76	(75%-125%)	06/22/06 11:19
		Uncert:			+/-1.09					
Curium 242		TPU:			+/-1.63	-0:/-				
Curium-242		Uncert		U	+/ 0.0229	pC1/g				
		TPII-			+/-0.0608					
Curium-243/244		16.6			15.4	nCi/g		93	(75%-125%)	
		Uncert:			+/-1.33	r 8			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
		TPU:			+/-2.26					
QC120111759	7 MB									
Americium-241				U	0.054	pCi/g				06/22/06 11:19
		Uncert:			+/-0.148					
G .:		TPU:			+/-0.149	011				
Curium-242		I In a set.		U	0.107	pC1/g				
		Uncen:			$\pm / 0.164$					
Curium-243/244		IPU:		11	-7-0.103	nCi/a				
		Uncert:		Ũ	+/-0.238	P01/5				
		TPU:			+/-0.238					
QC1201117599	9 164220002	MS								
Americium-241		13.7 U	-0.0378		10.3	pCi/g		75	(75%-125%)	
		Uncert:	+/-0.0665		+/-2.01					
a : au		TPU:	+/-0.0666		+/-2.68	C (
Curium-242		U	0.00	U	-0.0497	pCi/g				
		Uncert:	+/-0.0752		+/-0.257					
Curium-243/244		167 U	+/-0.0752		+/-0.237	nCi/a		95	(75%-125%)	
		Uncert.	+/-0.0649		+/-2.52	PC"g		,,,	(,5,0-12570)	
		TPU	+/-0.065		+/-3.70					
Batch 54	40464									
OC1201117603	2 164220002	DUP								
Plutonium-238		U	0.032	U	0.018	pCi/g	56		(0% - 100%) <i>A</i> XA1	06/22/06 11:19

QC Summary

Workorder: 164220										Page 2	of 9		
Parmname			NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec													
Batch 54	0464												
			Uncert:	+/-0.0628		+/-0.0717							
			TPU:	+/-0.0629		+/-0.0717							
Plutonium-239/24	0		U	-0.19	U	0.018	pCi/s	g 242		(0% - 100%))		
			Uncert:	+/-0.124		+/-0.0716							
			TPU:	+/-0.125		+/-0.0716							
QC1201117604	LCS												
Plutonium-238					U	0.0504	pCi/g	3		(75%-125%))		
			Uncert:			+/-0.0944							
D1 / 000/04	0		TPU:			+/-0.0946	0.1						
Plutonium-239/24	0		12.6			11.2	pCi/g	5	89	(75%-125%))		
			Uncert:			+/-1.19							
001201117(0)	MD		IPU:			+/-1.6/							
Plutonium-238	IVID				U	0.00	nCi/e	,					
1 1010110111 200			Uncert:		U	+/-0.0707	P0. E						
			TPU:			+/-0.0707							
Plutonium-239/24	0				U	0.0462	pCi/g	ç					
			Uncert:			+/-0.104							
			TPU:			+/-0.104							
QC1201117603	164220002	MS											
Plutonium-238			U	0.032	U	0.0403	pCi/g	;		(75%-125%)	1		
			Uncert:	+/-0.0628		+/-0.091							
			TPU:	+/-0.0629		+/-0.0911							
Plutonium-239/24	0		12.6 U	-0.19		11.2	pCi/g	5	89	(75%-125%)	l .		
			Uncert:	+/-0.124		+/-1.17							
Batch 54	0465		TPU:	+/-0.125		+/-1.63							
Daten 34	0-05												
QC1201117606	164220002	DUP					<u></u>			(00)			
Plutonium-241			U	8.31	U	2.27	pCi/g	; 0		(0% - 100%)	AXA1	06/23/06	5 21:49
			Uncert:	+/-9.79		+/-8.8/							
001201117(09	LCC		TPU:	+/-9.82		+/-8.88							
Phytonium-241	LUS		140			117	nCi/a	,	83	(75%-125%)		06/23/04	\$ 22.22
Thutomum-241			Uncert:			+/-14.6	peng		05	(7570-12570)		00/25/00) 22.22
			TPU			+/-18.8							
OC1201117605	MB												
Plutonium-241					U	-3.1	pCi/g					06/29/06	5 00:04
			Uncert:			+/-10.1							
			TPU:			+/-10.1							
QC1201117607	164220002	MS											
Plutonium-241			142 U	8.31		110	pCi/g		77	(75%-125%)		06/23/06	5 22:05
			Uncert:	+/-9.79		+/-13.0							
			TPU:	+/-9.82		+/-16.6							
Rad Gamma Spec Batch 530	6186												
QC1201107353	164220002	DUP											
Actinium-228				0.646		0.606	pCi/g	6		(0% - 100%)	MJH1	06/20/06	10:19
			Uncert:	+/-0.123		+/-0.212							

+/-0.212

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Workorder: 164220				.	- Page 3 of 9							
Parmname	NOM	Sample Qual		QC	Units RPD%		REC% Range Anlst			Date Time	Time	
Rad Gamma Spec												
Batch 536186												
	TPU:	+/-0.123										
Americium-241	U	0.0463	U	-0.00516	pCi/g	g 250		(0% - 100%))			
	Uncert:	+/-0.0455		+/-0.0334								
	TPU:	+/-0.0455		+/-0.0334								
Bismuth-212		. 0.497		0.499	pCi/g	; O		(0% - 100%))			
	Uncert:	+/-0.194		+/-0.314								
: :	TPU:	+/-0.194		+/-0.314								
Bismuth-214		0.534		0.624	pCi/g	; 16		(0% - 100%))			
	Uncert:	+/-0.0856		+/-0.0957								
	TPU:	+/-0.0856		+/-0.0957								
Cesium-134	U	0.0362	U	0.0393	pCi/g	8		(0% - 100%)				
	Uncert:	+/-0.0269		+/-0.0379								
G	TPU:	+/-0.0269		+/-0.0379	<u> </u>	- 0		(00)				
Cesium-137	U	0.0264	U	0.0144	pCı/g	; 59		(0% - 100%)				
	Uncert:	+/-0.01//		+/-0.0255								
Calak (0	TPU:	+/-0.0177		+/-0.0255	0.1	27		(00/ 1008/)				
Cobalt-60	U	0.0213	U	0.0279	pC1/g	27		(0% - 100%)				
	Uncert:	+/-0.0149		+/-0.0414								
Europium 152	IPU:	+/-0.0149	11	+/-0.0414	-Cila	142		(00/ 1000/)				
Europium-152	U	+/ 0.0455	0	+/ 0.0602	pC//g	145		(0% - 100%)				
	TDL.	+/-0.0455		+/-0.0002								
Europium-154	IPU:	-0.0433	I	-0.0310	nCi/a	167		(0% 100%)				
Europium-154	U	+/-0.0636	U	+/.0 0859	peng	107		(070 - 10070)				
	TDI I	+/-0.0636		+/-0.0859								
Europium-155	IFU:	0.0554	I	0.0481	nCi/a	14		(0% - 100%)				
Europium-155	U Uncert:	+/-0.0468	U	+/-0.0651	peng	17		(070 - 10070)				
	TDI I-	+/-0.0468		+/-0.0651								
Lead-212	110.	0 703		0 787	nCi/a	11		(0% - 20%)				
	Uncert [.]	+/-0 0499		+/-0.0603	p0#5			(0/0 20/0)				
	TPU	+/-0 0499		+/-0.0603								
Lead-214	11 0.	0.602		0.659	pCi/g	9		(0% - 20%)				
	Uncert:	+/-0.0664		+/-0.106	r 6	, i i		(0/0 20/0)				
	TPU:	+/-0.0664		+/-0.106								
Manganese-54	U	0.00163	U	0.00979	pCi/g	143	((0% - 100%)				
-	Uncert:	+/-0.0184		+/-0.0222								
	TPU:	+/-0.0184		+/-0.0222								
Niobium-94	ับ	0.00959	U	0.0335	pCi/g	111	((0% - 100%)				
	Uncert:	+/-0.014		+/-0.0355								
	TPU:	+/-0.014		+/-0.0355								
Potassium-40		9.42		9.25	pCi/g	2		(0% - 20%)				
	Uncert:	+/-0.696		+/-0.703								
	TPU:	+/-0.696		+/-0.703								
Radium-226		0.534		0.624	pCi/g	16	(0% - 100%)				
	Uncert:	+/-0.0856		+/-0.0957				,				
	TPU:	+/-0.0856		+/-0.0957								
Silver-108m	U	0.0101	U	-0.00367	pCi/g	429	(0% - 100%)				
	Uncert:	+/-0.0162		+/-0.0229								

Washandan 1(1220		<u>v</u> · · · ·			•			
workorder: 164220							Page 4 of 9	
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Gamma Spec								
Batch 536186								
	TPU:	+/-0.0162	+/-0.0229					
Thallium-208		0.227	0.278	pCi/{	g 20		(0% - 100%)	
	Uncert:	+/-0.0424	+/-0.0495					
	TPU:	+/-0.0424	+/-0.0495					
QC1201107354 LCS								
Actinium-228		U	-0.00213	pCi/g	s			06/20/06 10:20
	Uncert:		+/-0.430					
	TPU:		+/-0.430					
Americium-241	23.4		26.5	pCi/g	g	113	(75%-125%)	
	Uncert:		+/-1.24					
	TPU:		+/-1.24					
Bismuth-212		U	0.0167	pCi/į	ş			
	Uncert:		+/-0.830					
	TPU:		+/-0.830					
Bismuth-214		U	0.110	pCi/g	3			
	Uncert:		+/-0.223					
	TPU:		+/-0.223					
Cesium-134		U	0.00152	pCi/g	3			
	Uncert:		+/-0.120					
	TPU:		+/-0.120					
Cesium-137	9.63		10.6	pCi/g	3	110	(75%-125%)	
	Uncert:		+/-0.401					
	TPU:		+/-0.401					
Cobalt-60	15.0		16.4	pCi/g	5	110	(75%-125%)	
	Uncert:		+/-0.584					
	TPU:		+/-0.584					
Europium-152		U	0.349	pCi/g	5			
	Uncert:		+/-0.247					
	TPU:		+/-0.247					
Europium-154		U	0.089	pCi/g	5			
	Uncert:		+/-0.277					
	TPU:		+/-0.277					
Europium-155		U	0.0129	pCi/g	ţ			
-	Uncert:		+/-0.317					
	TPU:		+/-0.317					
Lead-212		U	0.0378	pCi/g	(
	Uncert:		+/-0.159		, 			
	TPU:		+/-0.159					
Lead-214		U	0.0858	pCi/g				
	Uncert:		+/-0.180	1 0	, 			
	TPU:		+/-0.180					
Manganese-54		U	-0.0333	pCi/g				
5	Uncert:		+/-0.104	F 6	·			
	TPU		+/-0 104					
Niobium-94		U	0.0477	nCi/o				
	Uncert	5	+/-0 104	r~"5				
	трі і		+/_0 104					
Potassium-40	110.	IT	0 103	nCi/a				
		0	0.105	PC"8				

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Wanhandana 164000		<u> </u>						
workorder: 164220			Page 5 of 9					
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Gamma Spec								
Batch 536186								
	Uncert:		+/-0.950			•		
	TPU:		+/-0.950					
Radium-226		U	0.110	pCi/	g	((75%-125%)	
	Uncert:		+/-0.223					
	TPU:		+/-0.223					
Silver-108m		U	0.0477	pCi/	g			
	Uncert:		+/-0.0984					
	TPU:		+/-0.0984					
Thallium-208		U	0.110	pCi/	g			
	Uncert:		+/-0.104					
	TPU:		+/-0.104					•
QC1201107352 MB			0.0((7	-0:/	_			06/10/06 00 00
Actinium-228	I I a sector	U	0.0667	pC1/	g			06/19/06 20:38
	Uncert:		+/-0.0725					
Amoriaium 241	IPU:	TI	+/-0.0/25	-0:4	_			
Americium-241	T line and	0	0.0113	pC1/j	g			
	Uncert:		+/-0.08/3					
Riemuth 212	IPU:	T	+/-0.08/3	-C:/	~			
Bisinutii-212	Uncort	U	-0.000464	pC1/§	g			
	Uncert.		+/-0.101					
Bismuth-214	IPU:	II	-7-0.101	nCil.	•			
Disinum-214	Uncert	0	+/ 0.0337	pen/ş	9			
	TDU.		+/-0.0337					
Cesium-134	IFU.	П	-0.00516	nCi/c	r			
Costant 151	Uncert	0	+/-0.0162	peng	5			
	TPU		+/-0.0162					
Cesium-137	110.	U	0.00559	nCi/s	J.			
	Uncert:	0	+/-0.0325	P	2			
	TPU		+/-0.0325					
Cobalt-60		U	-0.00201	pCi/s	2			
	Uncert:	_	+/-0.0154	r	2			
	TPU		+/-0.0154					
Europium-152		U	0.000846	pCi/g	z			
-	Uncert:		+/-0.0403		•			
	TPU:		+/-0.0403					
Europium-154		U ·	-7.710E-05	pCi/g	Ş			
	Uncert:		+/-0.0376					
	TPU:		+/-0.0376					
Europium-155		U	0.00972	pCi/g	5			
	Uncert:		+/-0.0384					
	TPU:		+/-0.0384					
Lead-212		U	0.0227	pCi/g	5			
	Uncert:		+/-0.026					
	TPU:		+/-0.026					
Lead-214		U	0.0215	pCi/g	ç.			
	Uncert:		+/-0.0287					
	TPU:		+/-0.0287					

				<u><u>x</u>=</u>		<u> </u>							
Workorder:	164220									Page	5 of 9		
Parmname			NOM	Sample (Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec Batch	: 536186												
Manganese-54					U	-0.00138	pCi/	g					
Ū			Uncert:			+/-0.0176	•	÷					
			TPU:			+/-0.0176							
Niobium-94					U	0.0168	pCi/	g					
			Uncert:			+/-0.0156							
			TPU:			+/-0.0156							
Potassium-40			••		U	0.301	pCi/	g					
			Uncert:			+/-0.208							
Dadium 226			TPU:		11	+/-0.208	-0:/	-					
Radium-220			Uncort		U	± 0.010	pCi/	g					
						+/-0.0337							
Silver-108m			IFU.		U	-0.00382	nCi/s	σ					
			Uncert:		U	+/-0.0128	pen.	6					
			TPU			+/-0.0128							
Thallium-208					U	0.00659	pCi/j	g					
			Uncert:			+/-0.0142							
			TPU:			+/-0.0142							
Rad Gas Flow Batch	539388												
QC120111489	9 164220002	DUP											
Strontium-90			U	0.00983	U	-0.0144	pCi/	g 0		(0% - 100%) BXF1	06/25/0	6 11:54
			Uncert:	+/-0.0153		+/-0.0118							
			TPU:	+/-0.0153		+/-0.0118							
QC120111490	1 LCS		1.45			1.22	<u>C''</u>			(260/ 1260/)		06/05/0	
Strontium-90			I.45			1.33	pC1/§	3	91	(75%-125%))	06/25/0	5 11:54
			Uncert:			$\pm / 0.0832$							
OC120111489	8 MB		, IPU:			+/-0.0894							
Strontium-90	0 100				U	-0.0105	pCi/s	2				06/25/0	6 10:53
			Uncert:			+/-0.0112	r t	5					
			TPU:			+/-0.0112							
QC120111490	0 164220002	MS											
Strontium-90			1.46 U	0.00983		1.37	pCi/g	3	94	(75%-125%)	ŀ	06/25/0	5 10:54
			Uncert:	+/-0.0153		+/-0.095							
			TPU:	+/-0.0153		+/-0.103							
Rad Liquid Scintil Batch 5	llation 35984												
QC120110688	6 163626016	DUP											
Tritium			U	0.738	U	-1.57	pCi/g	g 0		(0% - 100%)	NXPI	06/17/06	5 17:31
			Uncert:	+/-6.97		+/-7.27							
0.0100110/00			TPU:	+/-6.97		+/-7.27							
QC120110688 Tritium	8 LCS		52.7			55.7	nCi/a	,	105	(75%-175%)		06/17/04	\$ 18.04
11114111			Uncert:				pci/g	5	103	(15/0+125/0)		00/1//00	710:04
			TPI I-			+/-9.22							
OC120110688	5 MB		110.										
Tritium					U	-0.845	pCi/g	5				06/17/06	5 17:15

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Workorder:	164220									Page 7 of 9	
Parmname			NOM	Sample (Qual	QC	Units	RPD%	REC%	Range Anist	Date Time
Rad Liquid Scintilla Batch 53	ation 5984										
			Uncert: TPU:			+/-5.81 +/-5.81					
QC1201106887 Tritium	163626016	MS	53.0 U Uncert: TPU:	0.738 +/-6.97 +/-6.97		44.6 +/-8.62 +/-8.66	pCi/	g .	84	(75%-125%)	06/17/06 17:47
Batch 53	6314			,,		1 0100					
QC1201107611 Technetium-99	163741008	DUP	U Uncert:	0.196 +/-0.227	U	0.273 +/-0.233	pCi/	g 0		(0% - 100%) SXE	06/14/06 18:37
QC1201107613	LCS		TPU:	+/-0.227		+/-0.233					
Technetium-99			13.1 Uncert: TPU:			11.5 +/-0.471 +/-0.540	pCi/	g	87	(75%-125%)	06/14/06 19:11
QC1201107610 Technetium-99	мв		Uncert: TPU:		U	0.090 +/-0.200 +/-0.200	pCi/	g			06/14/06 18:20
QC1201107612 Technetium-99	163741008	MS	12.7 U Uncert:	0.196 +/-0.227 +/-0.227		11.2 +/-0.494 +/ 0.557	pCi/j	g	88	(75%-125%)	06/14/06 18:54
Batch 53	6336		IFU.	17-0.227		17-0.557					
QC1201107671 Carbon-14	164220002	DUP	U Uncert: TPU:	-0.0461 +/-0.0864 +/-0.0864	U	-0.0626 +/-0.0867 +/-0.0867	pCi/į	g 0		(0% - 100%) ATH2	06/16/06 11:05
QC1201107673 Carbon-14	LCS		6.98 Uncert: TPU:			7.01 +/-0.173 +/-0.205	pCi/{	g	100	(75%-125%)	06/16/06 14:06
QC1201107670 Carbon-14	MB		Uncert: TPU:		U	0.032 +/-0.0872 +/-0.0872	pCi/Į	g			06/16/06 09:31
QC1201107672 Carbon-14	164220002	MS	7.03 U Uncert: TPU:	-0.0461 +/-0.0864 +/-0.0864		7.10 +/-0.174 +/-0.206	pCi/g	g	101	(75%-125%)	06/16/06 12:38
Batch 538	8969										
QC1201113888 Iron-55	163741008	DUP	U Uncert: TPU:	21.1 +/-18.3 +/-18.5	U	-1.03 +/-16.3 +/-16.3	pCi/į	g 0		(0% - 100%) SLN1	06/21/06 10:23
QC1201113890 Iron-55	LCS		575 Uncert: TPU:			529 +/-44.0 +/-86.2	pCi/g	5	92	(75%-125%)	06/21/06 10:40

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QC Summary

Parmane NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time Rad Liquid Scintillation Batch 538969 QC1201113887 MB 06/21/06 09:51 QC1201113887 MB Uncert: +/-26.8 06/21/06 09:51 QC1201113889 163741008 MS TPU: +/-26.8 06/21/06 09:51 Uncert: +/-18.3 +/-33.8 TPU: +/-26.8 06/21/06 10:07 Uncert: +/-18.3 +/-33.8 TPU: +/-18.5 +/-30.8 06/21/06 10:07 Batch 541000 Uncert: +/-18.5 +/-74.0 0 06/28/06 18:29 Nickel-63 U 4.21 U 3.05 pCi/g 0 (0% - 100%) SLN1 06/28/06 18:29 QC1201118872 LCS Ifo7 149 pCi/g 90 (75%-125%) 06/28/06 20:03 QC1201118869 MB Uncert: +/-4.20 <th>Workorder: 164220</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Page 8</th> <th>S of 9</th> <th></th> <th></th>	Workorder: 164220								Page 8	S of 9		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Rad Liquid Scintillation Batch 538969											
$\begin{array}{cccccccccccccccccccccccccccccccccccc$												
Initi-33 Uncert: +/-26.8 00/21/08 05.31 QC1201113889 163741008 MS TPU: +/-26.8 Iron-55 594 U 21.1 546 pCi/g 92 (75%-125%) 06/21/06 10:07 Uncert: +/-18.3 +/-33.8 TPU: +/-4.0 75% 06/21/06 10:07 Batch 541000 U 4.21 U 3.05 pCi/g 0 (0% - 100%) SLN1 06/28/06 18:29 Nickel-63 U 4.21 U 3.05 pCi/g 0 (0% - 100%) SLN1 06/28/06 18:29 QC1201118872 LCS Ifo7 149 pCi/g 90 (75%-125%) 06/28/06 20:03 Uncert: +/-4.20 TPU: +/-5.46 06/28/06 17:42 06/28/06 17:42 QC1201118869 MB U 1.39 pCi/g 06/28/06 17:42 06/28/06 17:42 Vncert: +/-1.55 TPU: +/-1.55 06/28/06 17:42 06/28/06 17:42	QC1201113887 MB			п	5 29	nCi/	~				06/21/0	6 00.51
Uncert: +/-20.8 QC1201113889 163741008 Iron-55 594 U Uncert: +/-18.3 +/-18.3 +/-33.8 TPU: +/-18.5	101-55	Uncert		0	+/ 26.8	pen	g				00/21/0	0 09.31
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		TDU.			+/ 26.8							
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Uncert: +/-18.3 +/-33.8 TPU: +/-18.5 +/-74.0 Batch 541000 QC1201118870 164220002 DUP Nickel-63 U 4.21 U 3.05 pCi/g 0 (0% - 100%) SLN1 06/28/06 18:29 Uncert: +/-5.83 +/-5.16 TPU: +/-5.83 +/-5.16 QC1201118872 LCS Nickel-63 I67 149 pCi/g 90 (75%-125%) 06/28/06 20:03 Uncert: +/-4.20 TPU: +/-5.46 QC1201118869 MB Nickel-63 U 1.39 pCi/g 06/28/06 17:42 Uncert: +/-1.55 TPU: +/-1.55	Iron-55	594 11	21.1		546	pCi/s	g	92	(75%-125%))	06/21/0	6 10.07
TPU: +/-18.5 +/-74.0 Batch 541000 QC1201118870 164220002 DUP Nickel-63 U 4.21 U 3.05 pCi/g 0 (0% - 100%) SLN1 06/28/06 18:29 QC1201118870 LCS Uncert: +/-5.83 +/-5.16 100 100 100 100 100 100 28/06 18:29 QC1201118872 LCS I67 149 pCi/g 90 (75%-125%) 06/28/06 20:03 Uncert: +/-4.20 TPU: +/-5.46 100 139 pCi/g 06/28/06 17:42 QC1201118869 MB U 1.39 pCi/g 06/28/06 17:42 Uncert: +/-1.55 TPU: +/-1.55 100 100 100 QC1201118871 164220002 MS MS 139 pCi/g 06/28/06 17:42		Uncert:	+/-18.3		+/-33.8	P 2	5	-	(/		
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Uncert: +/-4.20 TPU: +/-5.46 QC1201118869 MB Nickel-63 U 1.39 pCi/g 06/28/06 17:42 Uncert: +/-1.55 TPU: +/-1.55	Nickel-63	167			149	pCi/g	g	90	(75%-125%))	06/28/0	6 20:03
TPU: +/-5.46 QC1201118869 MB Nickel-63 U 1.39 pCi/g 06/28/06 17:42 Uncert: +/-1.55 TPU: +/-1.55 QC1201118871 164220002 MS		Uncert:			+/-4.20							
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Notes:

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated

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

- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound

RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

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QC Summary

Workorder:	164220							Page 9) of 9		
Parmname		NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anist	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.

Table of Contents

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Radiological Analysis Sample Data Summary Quality Control Data	7 12 22



CASE NARRATIVE For CONNECTICUT YANKEE RE: Soils PO# 002332 Work Order: 164551 SDG: MSR #06-0819

June 6, 2006

Laboratory Identification: General Engineering Laboratories, LLC

Mailing Address:

P.O. Box 30712 Charleston, South Carolina 29417

Express Mail Delivery and Shipping Address:

2040 Savage Road Charleston, South Carolina 29407

Telephone Number:

(843) 556-8171

Summary:

Sample receipt

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on 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):

<u>Sample ID</u>	<u>Client Sample ID</u>
164551001	9106-0002-017F
164551002	9106-0002-018F
164551003	9106-0002-018FS
164551004	9106-0002-019F

Items of Note:

There are no items of note.

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

Case Narrative:

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

Analytical Request:

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

Internal Chain of Custody:

Custody was maintained for the sample(s).

Data Package:

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

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

cupy

Cheryl Jones Project Manager

Chain of Custody and Supporting Documentation

Health Physics Procedure

164551./.

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

. _____

	Connecticut Y 362 Injun H	ankee At Iollow Road, E	omic Po ast Hampton,	wer C CT 06424	ompan 1	y			Cha	ain	of Cust	ody Form	No. 2006-00382
	Project Name: Haddam Ne	eck Decomn	nissioning					An	alyses F	Reque	sted	Lab Use Only	
	Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext. 3	3024									Comments:	
	Analytical Lab (Name, City General Engineering Labor 2040 Savage Road. Charles 843 556 8171. Attn. Chery Priority: 🛛 30 D. 🗌 14 D	y, State) ratories ston SC. 294 yl Jones	407			Container	FSSGAM	FSSALL	Sr-90				
i	Sample Designation	Date	Time	Media	Sample Type Code	&Type						Comment, Preservation	Láb Sample ID
ĸ1	9106-0002-017F	6/2/06	12·49	SE	Coue	BP	x	+	x		<u>+</u> +-	Transferred from COC 2006-003	78
24	9106-0002-018F	6/2/06	13:15	SE	C	BP	X	1	X		<u>├</u>	Transferred from COC 2006-003	78
3	9106-0002-018FS	6/2/06	13:15	SE	Ċ	BP	X	<u> </u>	T			Transferred from COC 2006-003	78
4	9106-0002-019F	6/2/06	13:45	SE	С	BP	X	1	X	<u> </u>		Transferred from COC 2006-003	78
· •				1		[18日1月2月1日日
				1		1		1	1				11월 13월 111章 12
:	NOTES: PO #: 002332 N	MSR #: 06- ()819 sswi	P# NA	🛛 LTP	QA 🗌	Radw	vaste Q.	A 🗌	Nor	QA	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp: Deg. C Custody Sealed? Y N
	1) Relinquished By JAMME RUART	6-	Date/Tim 7-06 / 11:	ie 0D	2) Rece	ived By	20	7	6-8	Dat 06	te/Time	C Other	Custody Seal
	3) Relinquished By		Date/Tim	le	4) Rece	ived By		[Dat	te/Time	Bill of Lading #	
	5) Relinquished By		Date/Tim	ie	6) Rece	ived By				Dat	te/Time	7919 6330 8756	

· · ·	(hery) 164542%	(Pm 40
	Connecticut Yankee Statement of Work for Analytical Lab Services	CY-ISC-SOW-001
	Figure 1. Sample Check-in List Date/Time Received: $6 - 8 - 06$ 900	
•	SDG#:MSR#06-0819, 0818	
• • •	Work Order Number:	\$ -00 382 6 - 00 380
•	Shipping Container ID: <u>11 - 8156</u> Chain of Custody # <u>200</u>	M No []
	1. Custody Seals on shipping container intact?	No DA
	2. Custody Seals dated and signed?	J No J 1
	 Chain-of-Custody record present? Cooler temperature <u>20°C</u> 	
•	5. Vermiculite/packing materials is: Wet [] Dry 🙀
	6. Number of samples in shipping container:	
	7. Sample holding times exceeded? Yes [X No []
- . ·	8. Samples have:	
	hazard labels	
· · ·		
•	9. Samples are:	
•	X in good conditionleaking	
•	brokenhave air bubbles	
	10. Were any anomalies identified in sample receipt? Yes []] No [X]
	11. Description of anomalies (include sample numbers):	
· · · ·		
•	Sample Custodian/Laboratory: AMaly Date:	6-8-06 700
	Telephoned to:OnBy	

1



Radiochemistry Case Narrative Connecticut Yankee Atomic Power Co. (YANK) Work Order 164551

Method/Analysis Information

Product:	Gamma,Solid-FSS GAM & ALL FSS
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	538669
Prep Batch Number:	537133

Sample ID	Client ID
164551001	9106-0002-017F
164551002	9106-0002-018F
164551003	9106-0002-018FS
164551004	9106-0002-019F
1201113174	Method Blank (MB)
1201113175	164551001(9106-0002-017F) Sample Duplicate (DUP)
1201113176	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 164551001 (9106-0002-017F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

The relative percent difference between samples 1201113175 (9106-0002-017F) and 164551001 (9106-0002-017F) for Bi-214, Ra-226 and Cs-137 did not meet the duplicate criteria. However, when a relative error ratio is calculated, precision is shown at 1.73 for Bi-214 and Ra-226 and 1.62 for Cs-137.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to interference.	Europium-155	1201113175
UI	Data rejected due to low abundance.	Lead-212	1201113174
		Potassium-40	1201113174

Method/Analysis Information

Product:	GFPC, Sr90, solid-ALL FSS
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	541208
Prep Batch Number:	537134
Dry Soil Prep GL-RAD-A-021 Batch Number:	537133

Sample ID	Client ID
164551001	9106-0002-017F
164551002	9106-0002-018F
164551003	9106-0002-018FS
164551004	9106-0002-019F
1201119317	Method Blank (MB)
1201119318	164551004(9106-0002-019F) Sample Duplicate (DUP)
1201119319	164551004(9106-0002-019F) Matrix Spike (MS)
1201119320	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

<u>Quality Control (QC) Information:</u>

Blank Information

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

Designated QC

The following sample was used for QC: 164551004 (9106-0002-019F).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Chemical Recoveries

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Oualifier 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:

7/06 **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#06-0819 GEL Work Order: 164551

The Qualifiers in this report are defined as follows:

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

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

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

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

Shillst

Reviewed by

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

Certificate of Analysis

Com Addi	ipany : ress :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power									
Cont	tact:	East Hampto Mr. Jack Mo	on, Connec cCarthy	ticut 06424			Report Date: July 6, 2006						
Ргоје	ect:	Soils PO# 0	02332										
		Client San Sample ID Matrix: Collect Da Receive D Collector:	nple ID:): ite: ate:		9106-00 1645510 SE 02-JUN 08-JUN Client	002-017F 001 1-06 1-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date	Time Batch N	1td	
Rad Gamma Spec	c Analys	sis											
Gamma,Solid–F	FSS GAM	1 & ALL FSS	,										
Actinium-228			0.706	+/-0.172	0.0626	+/-0.172	0.125	pCi/g	MJH1	06/26/00	5 1940 538669	1	
Amerícium-24	1	U	0.083	+/-0.0774	0.067	+/-0.0774	0.134	pCi/g					
Bismuth-212			0.404	+/-0.291	0.147	+/-0.291	0.293	pCi/g					
Bismuth-214			0.570	+/-0.101	0.0369	+/-0.101	0.0737	pCi/g					
Cesium-134		U	0.0448	+/-0.0239	0.0232	+/-0.0239	0.0464	pCi/g					
Cesium-13/			0.093	+/-0.0318	0.0208	+/-0.0318	0.0416	pCl/g					
Europium-152		T	-0.0343	+/-0.0343 +/-0.0775	0.0197	+/-0.0343	0.0393	pCi/g					
Europium=152			0.0343	+/-0.0773	0.0342	+/-0.0773	0.108	pCi/g					
Europium-154		U 11	-0.0483	+/-0.0626	0.0497	+/-0.107	0.0994	pCi/g					
Lead-212		U	0.0483	+/-0.0817	0.0301	+/-0.0817	0.109	pCi/g					
Lead -212			0.602	+/-0.103	0.0387	+/-0.103	0.0002	pCi/g					
Manganese-54		U	0.00262	+/-0.0217	0.0192	+/-0.0217	0.0384	pCi/g					
Niobium-94		Ŭ	0.0223	+/-0.0208	0.020	+/-0.0208	0.0399	pCi/g					
Potassium-40			9.46	+/-0.987	0.192	+/0.987	0.385	pCi/g					
Radium-226			0.570	+/-0.101	0.0369	+/-0.101	0.0737	pCi/g					
Silver-108m		U	-0.00347	+/-0.020	0.0174	+/-0.020	0.0348	pCi/g					
Thallium-208			0.212	+/-0.0455	0.0195	+/0.0455	0.0389	pCi/g					
Rad Gas Flow Pro	oportion	al Counting	;										
GFPC, Sr90, sol	'id-ALL	FSS						•					
Strontium-90		U	0.0214	+/-0.0159	0.0148	+/-0.0159	0.0323	pCi/g	BXF1	07/05/06	51218 541208	2	
		_	-			·							
The following Pr Method	ep Meth Descri	ods were pe ption	erformed			Analyst	Date	Time	Prep Batc	h			
Ash Soil Prep	Ash So	- il Prep, GL-	RAD-A-()21B		LXM1	06/09/0	06 0758	537134				
Dry Soil Prep	Dry So	il Prep GL-I	RAD-A-0	21		LXM2	06/08/0)6 1520	537133				

The following Analytical Methods were performed

Method	Description			
1	EML HASL 300, 4.5.2.3			
2	EPA 905.0 Modified			
Surrogate/T	racer recovery Test	Recovery%	Acceptable Limits	

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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	nple ID: :		9106-000 16455100	2–017F 1		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Co Pre	ontact: oject:	Mr. Jack Mc Soils PO# 00	Carthy 02332							
		East Hampto	on, Connec	ticut 06424				R	eport Date: July 6, 200	6
Co Ao	ompany : ldress :	Connecticut 362 Injun Ho	Yankee A ollow Rd	tomic Power						

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	70	(25%-125%)	

Notes:

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- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated

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

- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Certificate of Analysis

Comj Addr	pany : ress :	Connecticut 362 Injun H	t Yankee A follow Rd	tomic Power								
Conta	act:	East Hampt Mr. Jack Me	on, Connec cCarthy.	eticut 06424				Re	port Date: Ju	ly 6, 2006		
Proje	ect:	Soils PO# 0	02332									
		Client San Sample ID Matrix: Collect Da Receive D Collector:	nple ID: D: ate: ate:		9106-00 1645510 SE 02-JUN 08-JUN Client	002-018F 002 1-06 1-06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date T	ime Batch	Mtd
Rad Gamma Spec	Analys	sis										
Gamma,Solid-F.	SS GAM	A & ALL FSS	5									
Actinium-228			0.454	+/-0.144	0.0687	+/-0.144	0.137	pCi/g	MJH1	06/26/06 1	941 538669	1
Americium-241	l.	U	0.0221	+/-0.119	0.0727	+/-0.119	0.145	pCi/g				
Bismuth-212			0.467	+/-0.313	0.123	+/-0.313	0.247	pCi/g				
Bismuth-214			0.431	+/-0.0859	0.0773	+/-0.0859	0.155	pCi/g				
Cesium-134		U	0.0169	+/-0.0277	0.0237	+/-0.0277	0.0473	pCi/g				
Cesium-137			0.0809	+/-0.0308	0.0183	+/-0.0308	0.0366	pCi/g				
Cobalt-60			0.145	+/-0.0417	0.0226	+/-0.0417	0.0452	pCi/g				
Europium-152		U	-0.0334	+/0.0666	0.0497	+/-0.0666	0.0994	pCi/g				
Europium-154		U	-0.0109	+/-0.0649	0.0541	+/-0.0649	0.108	pCi/g				
Europium-155		U	0.0361	+/-0.0603	0.057	+/-0.0603	0.114	pCi/g				
Lead-212			0.493	+/-0.0723	0.0299	+/-0.0723	0.0598	pCi/g				
Lead-214			0.456	+/-0.0951	0.0364	+/-0.0951	0.0727	pCı/g				
Manganese-54		U	0.00174	+/-0.0234	0.0208	+/-0.0234	0.0417	pCi/g				
Niobium-94		U	0.0174	+/-0.0216	0.0198	+/-0.0216	0.0396	pC1/g				
Potassium-40			7.48	+/-0.906	0.164	+/-0.906	0.327	pCı/g				
Radium-226			0.431	+/-0.0859	0.0351	+/-0.0859	0.0702	pCı/g				
Silver-108m		U	0.0126	+/-0.0201	0.0187	+/-0.0201	0.0375	pCı/g				
Thallium-208			0.135	+/-0.0457	0.0187	+/-0.0457	0.0374	pCı/g				
Rad Gas Flow Pro	oportion	ial Counting	3									
GFPC, Sr90, soli	id-ALL	FSS										
Strontium-90		U	0.00758	+/-0.0112	0.0114	+/-0.0112	0.0251	pCi/g	BXF1	07/05/06 12	218 541208	2
The following Pro	ep Metl	hods were po	erformed			·	- <u></u>					
Method	Descri	ption				Analyst	Date	Time	Prep Batc	h		
Ash Soil Prep	Ash Sc	oil Prep, GL-	-RAD-A-	021B		LXM1	06/09/0	06 0758	537134			
Dry Soil Prep	Dry Sc	il Prep GL-	RAD-A-0	21		LXM2	06/08/0	1520	537133			
The following An	alytical	Methods w	ere perfor	med								
Method	Descri	ption										
1	EML H	IASL 300, 4	.5.2.3									
2	EPA 90	05.0 Modifie	d									
Surrogate/Tracer	· recove	ery Test				Recovery%	Acce	ptable Limits				
Carrier/Tracer Reco	overy	GFP	C, Sr90, so	lid-ALL FSS		85	(2	25%-125%)				

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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:	9106-0002-018F 164551002	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: July 6, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

Notes:

The Qualifiers in this report are defined as follows :

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- > Result is greater than value reported
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- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded

J Value is estimated

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Certificate of Analysis

Con Add	npany : iress :	Connectio 362 Injun	ut Yankee A Hollow Rd	tomic Power						
Con	itact:	East Ham Mr. Jack	pton, Conne McCarthy	cticut 06424				R	eport Date: July 6,	2006
Proj	ject:	Soils PO#	002332							
		Client S Sample Matrix: Collect I Receive Collecto	ample ID: ID: Date: Date: r:		9106-0 1645510 SE 02-JUN 08-JUN Client	002-018FS 003 J-06 J-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifie	r Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Da	te Time Batch Mto
Rad Gamma Spe	ec Analy	/sis	· · ·							
Gamma,Solid–I	FSS GAI	M & ALL F.	SS							
Actinium-228			0.634	+/-0.206	0.071	+/-0.206	0.142	pCi/g	MJH1 06/	26/06 2143 538669 1
Americium-24	11	ι	J 0.0957	+/-0.100	0.064	+/-0.100	0.128	pCi/g		
Bismuth-212			0.422	+/-0.344	0.163	+/-0.344	0.325	pCi/g		
Bismuth-214			0.547	+/-0.110	0.0358	+/-0.110	0.0715	pCi/g		
Cesium-134		ં દ	J 0.0511	+/-0.0335	0.0264	+/-0.0335	0.0528	pCi/g		
Cesium-137			0.0955	+/-0.0577	0.0238	+/-0.0577	0.0475	pCi/g		
Cobalt-60			0.325	+/-0.0637	0.0243	+/-0.0637	0.0486	pCi/g		
Europium-152	2	ι	J 0.0356	+/-0.0743	0.0529	+/-0.0743	0.106	pCi/g		
Europium-154	ŀ	ι	J -0.00503	+/-0.0759	0.0633	+/-0.0759	0.127	pCi/g		
Europium-155		ι	J -0.00931	+/-0.0655	0.0583	+/-0.0655	0.116	pCi/g		
Lead-212			0.622	+/-0.0818	0.0315	+/-0.0818	0.063	pCi/g		
Lead-214			0.491	+/-0.112	0.0375	+/-0.112	0.0749	pCi/g		
Manganese-54	ļ	ι	J -0.00889	+/-0.0289	0.0208	+/-0.0289	0.0415	pCi/g	•	
Niobium-94		ι	J 0.00212	+/-0.0219	0.0194	+/-0.0219	0.0388	pCi/g		
Potassium-40			9.08	+/-1.02	0.155	+/-1.02	0.310	pCi/g		
Radium-226			0.547	+/-0.110	0.0358	+/-0.110	0.0715	pCi/g		
Silver-108m		(5 -0.00447	+/-0.0205	0.0176	+/-0.0205	0.0351	pCi/g		
Thallium-208			0.178	+/-0.0449	0.0192	+/-0.0449	0.0383	pCi/g		
Rad Gas Flow Pr	oportio	nal Counti	ng							
GFPC, Sr90, so.	lid-ALL	L FSS								
Strontium-90		Ĺ	J -0.00242	+/-0.0123	0.0144	+/0.0123	0.032	pCi/g	BXF1 07/0	05/06 1218 541208 2
The following P	rep Met	thods were	performed	- <u></u>						
Method	Descr	iption				Analyst	Date	Time	e Prep Batch	
Ash Soil Prep	Ash S	oil Prep, Gl	L-RAD-A-	021B		LXM1	06/09/0	06 0758	3 537134	
Dry Soil Prep	Dry S	oil Prep GL	-RAD-A-0	21		LXM2	06/08/0)6 1520) 537133	
The following A	nalvtica	l Methods	were perfor	med						
Method	Descri	iption								
1	EML I	HASL 300,	4.5.2.3							111 - 112 -
2	EPA 9	05.0 Modif	ĩed							
Surrogate/Trace	Surrogate/Tracer recovery Test					Recovery%	Acce	ptable Limit	S	
Surrogate/Tracer recovery Carrier/Tracer Recovery		GF	PC, Sr90, so	lid-ALL FSS		63	(2	25%-125%)		

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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:	9106-0002-018FS 164551003	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Project:	Soils PO# 002332		
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy		Report Date: July 6, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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- < Result is less than value reported
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- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded

J Value is estimated

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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

The above sample is reported on a dry weight basis.

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Cor Add	mpany : dress :	Connecticut 362 Injun H	t Yankee A follow Rd	tomic Power								
Cor	ntact:	East Hampt Mr. Jack Me	on, Connec cCarthy	cticut 06424				R	eport Date: Jul	y 6, 2006		
Pro	ject:	Soils PO# 0	02332									
		Client San Sample ID Matrix: Collect Da Receive D Collector:	nple ID:): ate: ate:		9106-0 1645510 SE 02-JUN 08-JUN Client	002-019F 004 J-06 J-06	1	Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date Ti	me Batch M	td
Rad Gamma Spo	ec Analy	/sis										
Gamma,Solid–	FSS GA	M & ALL FSS	5									
Actinium-228	8		0.578	+/-0.150	0.0742	+/-0.150	0.148	pCi/g	MJH1	06/26/06 21	44 538669	1
Americium-24	41	U	0.0776	+/-0.101	0.0852	+/-0.101	0.170	pCi/g				
Bismuth-212			. 0.398	+/-0.359	0.182	+/-0.359	0.363	pCi/g				
Bismuth-214			0.505	+/-0.106	0.0377	+/-0.106	0.0754	pCi/g				
Cesium-134		U	0.0291	+/-0.0514	0.0293	+/-0.0514	0.0586	pCi/g				
Cesium-137			0.169	+/-0.051	0.0241	+/-0.051	0.0483	pCi/g				
Cobalt-60			0.121	+/-0.055	0.0149	+/-0.055	0.0297	pCi/g				
Europium-152	2	U	-0.0386	+/-0.0995	0.057	+/-0.0995	0.114	pCi/g				
Europium-154	4	U	0.0464	+/-0.0727	0.0668	+/-0.0727	0.134	pCi/g				
Europium-15:	>	U	0.0138	+/-0.0/1	0.0642	+/-0.071	0.128	pCi/g				
Lead-212			0.678	+/-0.090/	0.0344	+/-0.090/	0.0687	pCi/g				
Lead-214	A		0.574	+/-0.134	0.041	+/-0.134	0.0819	pCi/g				
Manganese-54	4	U	0.0193	+/-0.0233	0.0237	+/-0.0255	0.0473	pCI/g				
Potessium-40		U	0.00219	+/-0.0249	0.0215	+/-1.12	0.0420	pCi/g				
Radium-226			0.505	+/-0.106	0.175	+/-0.106	0.350	pCi/g				
Silver-108m		IT	-0.0117	+/-0.0232	0.0377	+/-0.0232	0.0794	pCi/g				
Thallium-208		U	0.223	+/-0.0252	0.0193	+/-0.0252	0.0391	pCi/g				
Rad Gas Flow P	ronortio	nal Counting	J. 0.225	0.0501	0.0175	0.0501	0.0505	pong				
CEPC Sr00 sc	did_ ALT	FCC	•									
Strontium-90	πα ΑΕΕ	U	-0.0131	+/-0.0146	0.0187	+/-0.0146	0.0406	pCi/g .	BXF1	07/05/06 12	18 541208 2	2
The following P	rep Met	hods were p	erformed									
Method	Descr	iption				Analyst	Date	Time	e Prep Batc	h		
Ash Soil Prep	Ash S	oil Prep, GL-	RAD-A-	021B		LXM1	06/09/0	6 0758	3 537134		<u>-</u>	
Dry Soil Prep	Dry S	oil Prep GL-	RAD-A-0	21		LXM2	06/08/0	6 1520	537133			
The following A	nalytica	l Methods w	ere perfor	med								
Method	Descri	iption							_			
1	EML I	HASL 300, 4.	.5.2.3									
2	EPA 9	05.0 Modifie	d									
Surrogate/Trac	er recov	ery Test				Recovery%	Acce	ptable Limit	5			
Carrier/Tracer Recovery		GFP	C, Sr90, so	lid-ALL FSS		65	(2	5%-125%)				

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Certificate of Analysis

Compa Addre	any: Co ss: 36	onnecticut 52 Injun Ho	Yankee A llow Rd	tomic Power						
Contac	Ea et: M	ast Hampto r. Jack Mc	n, Connec Carthy	ticut 06424				F	Report Date: July 6, 200	6
Projec	t: So	oils PO# 00	2332							
	C S	lient Sam ample ID:	ple ID:		9106-000 16455100	2–019F 4		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	(Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd

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
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			00	C Su	mmarv					
Client :	Connecticut Yankee A 362 Injun Hollow Rd	tomic Power			·····			Report Date: July 6, 2006 Page 1 of	6 [5	
Contact:	East Hampton, Conne Mr. Jack McCarthy	eticut								
Workorder:	164551									
Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC% Range A	nist	Date Time
Rad Gamma Spe Batch	c 538669		,							
QC12011131 Actinium-228	75 164551001 DUP		0.706		0.584	pCi/g	g 19	(0% - 100%) M	IJHI	06/28/06 07:02
		Uncert:	+/-0.172		+/-0.130					
		TPU:	+/-0.172		+/-0.130	0.1		(00/ 1000/)		
Americium-241		U	0.083	U	0.086	pCi/g	g 4	(0% - 100%)		
		Uncert:	+/-0.0774		+/-0.0902					
Bismuth-212		IPU:	0 404		0 381	nCi/o	. 6	(0% - 100%)		
		Uncert:	+/-0.291		+/-0.154	pene	, 0			
		TPU:	+/-0.291		+/-0.154					
Bismuth-214			0.570		0.461	pCi/g	21	(0% - 100%)		
		Uncert:	+/-0.101		+/-0.0707			ζ ,		
		TPU:	+/-0.101		+/-0.0707					
Cesium-134		U	0.0448	U	0.0161	pCi/g	; 94	(0% - 100%)		
		Uncert:	+/-0.0239		+/-0.0236					
		TPU:	+/-0.0239		+/-0.0236					
Cesium-137			0.093		0.128	pCi/g	; 32	(0% - 100%)		
		Uncert:	+/-0.0318		+/-0.0277					
		TPU:	+/-0.0318		+/-0.0277	<i></i>				
Cobalt-60			0.0807		0.0557	pCi/g	; 37	(0% - 100%)		
		Uncert:	+/-0.0343		+/-0.0288					
Europium 152		IPU:	+/-0.0343	II	+/-0.0288	nCi/a	261	(0% 100%)		
Europium-152		U Uncert:	+/-0.0775	0	+/-0 0324	peng	, 201	(078 - 10078)		
			+/-0.0775		+/-0.0324					
Europium-154		11 U.	0.00799	U	-0.0244	nCi/g	395	(0% - 100%)		
I		Uncert:	+/-0.107		+/-0.0402	r 0		(,		
		TPU:	+/-0.107		+/-0.0402					
Europium-155		U	-0.0483	UI	0.00	pCi/g	752	(0% - 100%)		
		Uncert:	+/-0.0626		+/-0.0492					
		TPU:	+/-0.0626		+/-0.0492					
Lead-212			0.623		0.665	pCi/g	7	(0% - 20%)		
		Uncert:	+/-0.0817		+/-0.073					
		TPU:	+/-0.0817		+/-0.073	~				
Lead-214		T 7	0.602		0.566	pCi/g	6	(0% - 20%)		
		Uncert:	+/-0.103		+/-0.0745					
Manganese-54		IPU:	+/-0.103	П	+/-0.0743	nCi/a	153	(0% - 100%)		
ivianganese-34		U Uncert:	+/-0.0217	U	+/-0.0144	hen.8	155	(070 - 10070)		
		TPL	+/-0.0217		+/-0 0144					
Niobium-94		110. IT	0.0223	U	-0.00792	nCi/ø	420	(0% - 100%)		
		Uncert:	+/-0.0208	-	+/-0.0107	r 6		()		
		TPU:	+/-0.0208		+/-0.0107					

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QC Summary

Workorder: 164551							•	Page 2	of 5		
Parmname	NOM	Sample (Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 538669											
Potassium-40		9.46		9.50	pCi/g	g 0		(0% - 20%))		
	Uncert:	+/-0.987		+/-0.796		-		. ,			
	TPU:	+/-0.987		+/-0.796							
Radium-226		0.570		0.461	pCi/g	g 21		(0% - 100%))		
	Uncert:	+/-0.101		+/-0.0707							
	TPU:	+/-0.101		+/-0.0707							
Silver-108m	U	-0.00347	υ	-0.00382	pCi/g	g 10		(0% - 100%))		
	Uncert:	+/-0.020		+/-0.0103							
	TPU:	+/-0.020		+/-0.0103							
Thallium-208		0.212		0.206	pCi/g	g 3		(0% - 100%))		
	Uncert:	+/-0.0455		+/-0.0277							
	TPU:	+/-0.0455		+/-0.0277							
QC1201113176 LCS											
Actinium-228			U	0.302	pCi/g	3				06/26/0	6 21:55
	Uncert:			+/-0.550							
	TPU:			+/-0.550	0.1			(===)(10==)()			
Americium-241	23.4			22.8	pCı/g	3	97	(75%-125%))		
	Uncert:			+/-3.61							
D: 1 010	TPU:			+/-3.61	<i>a</i> :/						
Bismuth-212			U	0.0874	pCi/g	3					
	Uncert:			+/-1.12							
Dia well 214	TPU:		TT	+/-1.12							
Bismuth-214	T I		U	0.180	pC1/g	5					
	Uncert:			+/-0.242							
Conjum 124	IPU:		П	+/-0.242	-Cile	_					
Cesium-134	I In conte		U	-0.0855	pc/g	5					
	Uncert:			+/-0.152							
Casium 127	1PU: 0.62	· · ·		.+/-0.132	nC:/o		100	(750/ 1750/)			
Cesium-137	9.05			9.00 +/ 0.746	pC1/g	5	100	(73%-123%)			
	TDU.			+/-0.740							
Cobalt 60	14.0			+/-0.740	nCi/a		105	(75%-125%)			
Coball-00	Uncert:			+/-1.16	peng	5	105	(7570-12570)			
	TPI I-			+/-1.16							
Europium-152	110.		IJ	-0 199	nCi/a	,					
barophani 15-	Uncert:		0	+/-0 337	pere	>					
	TPLI			+/-0.337							
Europium-154	110.		U	0.0423	nCi/e	r					
Baropiani is i	Uncert		U	+/-0.316		b					
	TPU			+/-0.316							
Europium-155	110.		U	-0.129	pCi/g	r					
	Uncert:		0	+/-0.358	P0#6	,					
	TPU			+/-0.358							
Lead-212	110,		U	0.218	nCi/ø	ŗ					
_	Uncert:		-	+/-0.190	r - " 6	,					
	TPU:			+/-0.190							
Lead-214			U	-0.0377	pCi/g						
	Uncert:			+/-0.226	. 0						

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QC Summary

Workorder: 164551			¥.,		Page 3 of 5					
Parmname	NOM	Sample Qual	QC	Units RI	PD% REC%	Range Anlst	Date Time			
Rad Gamma Spec										
Batch 538669										
	ТРИ		+/-0 226							
Manganese-54		U	0.0251	pCi/g						
C C	Uncert:		+/-0.143							
	TPU:		+/-0.143							
Niobium-94		U	0.0304	pCi/g						
	Uncert:		+/-0.109							
	TPU:		+/-0.109							
Potassium-40		U	0.367	pCi/g						
	Uncert:		+/-1.28							
	TPU:		+/-1.28							
Radium-226		U	0.180	pCi/g	((75%-125%)				
	Uncert:		+/-0.242							
	TPU:		+/-0.242							
Silver-108m		U	0.120	pCi/g						
	Uncert:		+/-0.123							
	TPU:		+/-0.123							
Thallium-208		U	0.0113	pCi/g						
	Uncert:		+/-0.129							
	TPU:		+/-0.129							
QC1201113174 MB		I	0.025	nCi/a			06/20/06 11.20			
Actimum-228	Uncert	0	+/ 0 0202	pC//g			00/28/06 11:28			
			+/-0.0202							
Americium-241	IFU.	11	0.0174	nCi/a						
Americiani-2-1	Uncert:	0	+/-0.0352	peng						
			+/-0.0352							
Bismuth-212	110.	IJ	0.0342	nCi/g						
	Uncert:	Ũ	+/-0.0458	perg						
	TPU		+/-0.0458							
Bismuth-214	110.	U	0.00963	nCi/g						
	Uncert [.]	Ũ	+/-0.0253	Pong						
	TPU		+/-0.0253							
Cesium-134	11 0.	U	-0.00174	pCi/g						
·	Uncert:		+/-0.00653	1 0						
	TPU:		+/-0.00653							
Cesium-137		U	0.00514	pCi/g						
	Uncert:		+/-0.0129							
	TPU:		+/-0.0129							
Cobalt-60		U	0.000786	pCi/g						
	Uncert:		+/-0.00617							
	TPU:		+/-0.00617							
Europium-152		U	-0.00965	pCi/g						
	Uncert:		+/-0.0168							
	TPU:		+/-0.0168							
Europium-154		U	-0.00089	pCi/g						
	Uncert:		+/-0.017							
	TPU:		+/-0.017							
Europium-155		U	-0.00581	pCi/g						

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QC Summary

Workorder: 164551			<i>k</i>		Page 4 of 5					
Parmname	NOM	Sample Qua	al OC	Units	RPD%	REC%	6 Range	Anlst	Date	Time
Rad Gamma Spec	1-0-6-4-4-					·	•••			
Batch 538669										
	Lincert.		$+/_{-0.0148}$							
	TPU.		+/ 0.0148							
Lead 212	IFU:	T	I 0.00	nCi/	a					
	L'incert:	0	+/-0.0103	pen,	5					
			+/-0.0103							
Lead-214	110.	Т	1 0.0144	nCi/	a					
	Uncert	· · · ·	+/-0.0117	PC"	5					
	TPI I.		+/-0.0117							
Manganese-54	110.	T	1 -0.00313	nCi/	σ					
manganese 5 f	Uncert		+/-0.00578	pen	6					
	TPU		+/-0.00578							
Niobium-94	110.	r	1 0.00179	nCi/	σ					
Noonam 94	Uncert		+/-0.00587	pen	5					
	TPU		+/-0.00587							
Potassium-40	110.	U	1 0.00	nCi/	σ					
rotussium 40	Uncert	U	+/-0 0746	per	5					
	TPLI		+/-0.0746							
Radium-226	110.	· 1	J 0.00963	pCi/s	ø					
	Uncert:		+/-0.0253	Pon	5					
	TPU		+/-0.0253							
Silver-108m	110.	Į	0.00355	pCi/s	p					
	Uncert:		+/-0.00525	P ~ 2	6					
	TPU		+/-0.00525							
Thallium-208	110.	τ	0.00341	pCi/s	ę					
	Uncert:	-	+/-0.0157	P	0					
	TPU:		+/-0.0157							
Rad Gas Flow										
Batch 541208										
QC1201119318 164551004 DUP Strentium 00		-0.0131 1	1 0.0114	nCil/	. 0		(00/ 1000/)	DVEI	07/05/0	6 13.19
Strontum-90	U Uncert:	+/-0.0131 C	+/-0.0131	peng	g U		(076 - 10076)	DAFI	07/05/0	5 12:16
	TDU.	+/ 0.0146	+/-0.0131							
001201110220 1.05	IPU:	-7-0.0140	+/-0.0131							
Strontium-90	1 38		1 27	nCi/o	,	92	(75%-125%)		07/05/06	6 14.24
Strohtum 90	Uncert:		+/-0.0859	perg	5	12	(1570 12570)		01/05/00) 14.24
	TPU		+/-0.0943							
OC1201119317 MB			1 0.09 15							
Strontium-90		τ	0.00252	pCi/s	z				07/05/06	5 12:18
	Uncert:		+/-0.0114							
	TPU:		+/-0.0114							
QC1201119319 164551004 MS										
Strontium-90	2.55 U	-0.0131	2.38	pCi/g	g	93	(75%-125%)		07/05/06	5 14:25
	Uncert:	+/-0.0146	+/-0.153				,			
	TPU:	+/-0.0146	+/-0.169							

Notes:

The Qualifiers in this report are defined as follows:

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QC Summary

Workor	der: 164551							Page :	5 of 5		
Parmnai	me	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
*	A quality control analyte	e recovery is outside of a	specified acceptance crit	eria							
<	Result is less than value	reported									
>	Result is greater than val	lue reported									
А	The TIC is a suspected a	Idol-condensation prod	uct								
В	Target analyte was detec	cted in the associated bla	ank								
BD	Results are either below	the MDC or tracer reco	very is low								
С	Analyte has been confirm	med by GC/MS analysis	;								
D	Results are reported from	n a diluted aliquot of the	e sample								
Н	Analytical holding time	was exceeded									
J	Value is estimated										
N/A	Spike recovery limits do	not apply. Sample con	centration exceeds spike	concentrat	tion by 4X	or more					
R	Sample results are reject	ed									
U	Analyte was analyzed for	or, but not detected abov	e the MDL, MDA, or LO	DD.							
UI	Gamma SpectroscopyI	Jncertain identification									
х	Consult Case Narrative,	Data Summary package	e, or Project Manager cor	ncerning th	is qualifie	r					
Y	QC Samples were not sp	oiked with this compoun	d								
^	RPD of sample and dupl	icate evaluated using +/	-RL. Concentrations are	e <5X the F	RL .						
h	Preparation or preservati	ion holding time was ex-	ceeded								
N/A indi ** Indica	icates that spike recovery ates analyte is a surrogate	limits do not apply whe compound.	n sample concentration e	exceeds spi	ke conc. t	by a factor of	of 4 or more.				
^ The Re sample is	elative Percent Difference s greater than five tir	(RPD) obtained from the mes (5X) the contract re	he sample duplicate (DU quired detection limit (R	JP) is evalu L). In case	ated agai s where e	nst the acce ither the sar	ptence criter nple or dupli	ia when the cate value	is		

less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result. For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

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

Table of Contents

General Narrative	1
Chain of Custody and Supporting Documentation	4
Radiological Analysis Sample Data Summary Quality Control Data	11 16 20



CASE NARRATIVE For CONNECTICUT YANKEE RE: Sediment PO# 002332 Work Order: 167358 SDG: MSR #06-0755

July 25, 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 June 02, 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>
167358001	9106-0002-014FS

Items of Note:

Based on an email received on July 19, 2006, GEL mistakenly canceled the analyses requested for sample 9106-0002-014FS in the original work order 164220. Upon notification by CYAPCO and subsequent clarification emails, GEL relogged sample 9106-0002-014FS for the requested analyses under work order 167358.

Analytical Request:

One sediment samples was analyzed for FSSGAM and Sr-90.

Internal Chain of Custody:

Custody was maintained for the sample(s).

Data Package:

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

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

Ungel.

Cheryl Jones Project Manager

Chain of Custody and Supporting Documentation

167358 cy 167538 relog of 16 4220

Health Physics Procedure

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

Connecticut Y 362 Injun	Yankee An Hollow Road, 1 860-26	tomic Po East Hampton 7-2556	wer C , CT 0642	lompan 4	У			Ch	ain of	f Cust	tody	Form _{No.}	2006-00372
Project Name: Haddam N	leck Decom	nissioning	· · · · ·	1		<u> </u>	A	nalvses	Reques	ted		Lab Use Only	
Contact Name & Phone: lack McCarthy 860-267	-2556 Ext.	3024										Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 343 556 8171. Attn. Cheryl Jones						SSGAM	SSALL	r-90					
Priority: 🛛 30 D. 🗌 14 1	D. 🗌 7 D.		Madia	Sample	Container Size-	, 1	ц.						
Sample Designation	Date	Time	Code	Code	Code	1		1				Comment, Preservation	Lab Sample ID
€106-0002-009F	5/18/06	14:28	SE	С	BP		x	+				Transferred from COC 2006-00364	
9106-0002-010F	5/18/06	14:50	SE	C	BP	x	<u> </u>	x				Transferred from COC 2006-00364	ť
9106-0002-011F	5/19/06	08:10	SE	C	BP	X	ļ	x x	+			Transferred from COC 2006-00365	<u>}</u>
9106-0002-012F	5/19/06	08:31	SE	C	BP	X		x	1			Transferred from COC 2006-00365	t
<u>9106-0002-013F</u>	5/19/06	09:00	SE	C	BP	X		X	+			Transferred from COC 2006-00365	<u></u>
<u>)106-0002-014F</u>	5/19/06	09:58	SE	С	BP	X		X	+			Transferred from COC 2006-00365	
9106-0002-014FS*	5/19/06	09:58	SE	C	BP	X		X	1			Transferred from COC 2006-00365	
9106-0002-015F	5/19/06	10:29	SE	C	BP	X		X				Transferred from COC 2006-00365	<u>}</u> -
9106-0002-016F	5/19/06	13:19	SE	C	BP	X		X				Transferred from COC 2006-00365	
NOTES: PO #: 002332 MSR #: 06- SSWP# NA 🛛 LTP QA 🗌 Radwaste QA 🗌 Non QA Samples Shipped Via: I 0755 🏾 Fed Ex C 30 Client requested analysis canceled CD 6/5/200 🔲 Hand						Internal Container Temp.: Deg. C Custody							
Relinquished By		Date/Time		2) Dechi									Sealed?
[inthe	Custod Custod Custod Intr						Custody Seal Intact?						
3) Relinquished By Date/Time				4) Receiv	red By				Date/1	lime .		Bill of Lading #	Y ⊡ N □
) Relinquished By		Date/Time		6) Receiv	red By				Date/7	Time	<u> </u>	7909 4145 5709	

4 1 - 5 -

1675 reloe **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 - 0037 Shipping Container ID: 1909 5789 Yes [X] No [] Custody Seals on shipping container intact? Custody Seals dated and signed? 2. Yes X No [Chain-of-Custody record present? 3. Yes [] No [] 4. Cooler temperature Wet [] Dry (1 hopsching 5. Vermiculite/packing materials is: 6. Number of samples in shipping container; 7. Sample holding times exceeded? Yes [] No 🕅 8. Sample's have: tape hazard labels custody seals appropriate sample labels 9. Samples are: in good condition leaking broken have air bubbles Were any anomalies identified in sample receipt? 10. Yes [] No [Description of anomalies (include sample numbers): 1ł. Sample Custodian/Laboratory: 6 20 6 Date: Telephoned to:___ On



SAMPLE RECEIPT & REVIEW FORM

	"PATORIES"				PM use only				
Clime Connections Yand po					SDG/ARCOC/Work Order: 164220 167358 relog				
Data Persived: C + NOCO					PM(A) Review (ensure non-conforming items are resolved prior to signing):				
Ë	and Antimeter (a cal cal				- Clerk				
Ľ	eceived By: CI								
Γ					Y				
l	Sample Receipt Criteria			Ž i	2 Comments/Qualifiers (Required for Non-Conforming Items)				
	•	ſ	ľ						
h	Shipping containers received intac	:1		\top	Circle Applicable: seals broken damaged container leaking container other (describe)				
Ľ	and sealed?				the international state of the				
Γ	Samples requiring cold				Circle Coolant # ree/bags blue ice dry ice none outer describe)				
1	2 preservation within $(4 + / - 2 C)$?								
┝	Record preservation method.	+							
3	included with shipment?								
-	Sample containers intact and		-		Circle/Applicable: seals broken damaged container leaking container other (describe)				
4	sealed?								
	Samples requiring chemical				Sample ID's, containers affected and observed pH:				
3	preservation at proper pH?								
6	VOA vials free of headspace		Τ	X	Sample ID's and containers affected:				
	(defined as < 6mm bubble)?		\square						
~	Are Encore containers present?								
'	VOA laboratory)	V							
	Samples received within holding	4	-	-	Id's and tests affected:				
8	time?								
0	Sample ID's on COC match ID's				Sample ID's and containers affected:				
_	on bottles?								
10	Date & time on COC match date				Sample ID's affected:				
_	& time on bottles?								
11	Number of containers received				Sample ID's affected:				
	match number indicated on COC?	L							
12	COC form is properly signed in				# 00372				
-	relinquished/received sections?			·	(oc - 2006 - 00371- cdf 6/2/06				
	Air Bill Tracking We &								
4	Additional Comments				1				
	Constants								
		Ř	न्न	ē	RSO RAD Receipt #				
Suspected Hazard Information		llate	Ľ	*If > x2 area background is observed on samples identified as "non-					
		ν ζęĝη	legu	ligh	regulated/non-radioactive", contact the Radiation Safety group for further				
57	Radiological Classification?		5		Investigation.				
	PCB Regulated?	/	\mathbf{r}		Comments				
4	Shipped as DOT Hazardous								
	Material? If yes, contact Waste	,			Hazard Class Shipped:				
Manager or ESH Manager.					UN#:				
- 4	PM (or PMA) review of Hazard class	ificati	ion:		Initials Date: (0/-) 04				
-					The second secon				
					(7				

Subject: RE: Missing sample results from GEL (MSR #06-0755) From: "Dale Randall" <randall@cyapco.com> Date: Wed, 19 Jul 2006 09:22:51 -0400 To: "Cheryl Jones" <cj@gel.com>

CC: "Clyde Newson" <Newson@CYAPCO.com>, "John McCarthy" <McCarthy@CYAPCO.com>

Cheryl,

We would appreciate a short narrative of the corrections for 164220 and an expedited analysis of sample 9106-0002-014S. Thanks for your prompt attention in helping us resolve this issue.

Best Regards, Dale

-----Original Message-----From: Cheryl Jones [mailto:cj@gel.com] Sent: Wednesday, July 19, 2006 9:07 AM To: Dale Randall Cc: Clyde Newson; John McCarthy Subject: Re: Missing sample results from GEL (MSR #06-0755)

Dale,

It appears that the direction in Jack's original email was misunderstood. Talking this situation over with Cheryl Duffy, it's clear that we took his direction to 'withdraw and exclude samples 1, 3, 6, and 16 from analysis' to be our sample IDs and not the location IDs from the COC. In this case, we should have requested clarification and I apologize that we did not. We have the sample container for 9106-0002-014FS and will relog it today for the requested analyses. Do you need these results expedited?

Also, will you need the narrative for 164220 corrected to reflect the requested cancellation email?

Thanks, Cheryl

Dale Randall wrote:

You are correct. My notes also indicate that due to a design change, we intended to stop analysis for samples 9106-0002-001F, 9106-0002-003F, 9106-0002-006F, 9106-0002-006FS, and 9106-0002-016F. (Before seeing your notes I was a little confused as to why we have a result for 9106-0002-006FS but not 9106-0002-006F) In any case, that leaves the result for sample 9106-0002-014FS as missing. Could this sample result be provided?

-----Original Message-----From: Cheryl Jones [mailto:cj@gel.com] Sent: Wednesday, July 19, 2006 8:30 AM To: John McCarthy Cc: Dale Randall; Clyde Newson; Cheryl Duffy Subject: Re: Missing sample results from GEL (MSR #06-0755)

Jack,

The documentation in the package is incomplete. The COC has a note

written on the bottom indicating that the analyses were canceled for several samples at the request of an email received on 6/5/06. The email should have also been included in the package to document the request and this information should have been listed in the Items of

Note section of the package general narrative. I've attached the email request for your use. Do you need me to correct the package narrative and resend it? Thanks, Cheryl John McCarthy wrote: Cheryl, could you follow up on this? Thank you Jack *From:* Dale Randall *Sent:* Wednesday, July 19, 2006 7:53 AM *To:* John McCarthy; Clyde Newson *Subject:* Missing sample results from GEL (MSR #06-0755) Jack: MSR #06-0755 does not contain results for samples 9106-0002-006F or 9106-0002-014FS. We have documentation indicating that the listed samples were received by GEL, but they were not included with results package (either in hardcopy or electronically). Please query the lab as to their status. Thanks, Dale P.S. Each of these samples is one half of a split, which would be a problem except that we collected an additional split in the second round of sampling. We thus meet the 5% spilt-sample requirement. Bottom line: we comply with the FSS requirements, but less justification will be needed if we receive the two sample results that

are missing.

Cheryl A. Jones Project Manager/PM Team Leader General Engineering Laboratories, LLC 2040 Savage Road Charleston, S.C. 29407 (843) 769-7388 Direct Line (843) 556-8171 x 4243 (843) 766-1178 (fax)

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Radiochemistry Case Narrative Connecticut Yankee Atomic Power Co. (YANK) Work Order 167358

Method/Analysis Information

Product:	Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	549751
Prep Batch Number:	549528

Client ID
9106-0002-014FS
Method Blank (MB)
167358001(9106-0002-014FS) Sample Duplicate (DUP)
Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 167358001 (9106-0002-014FS).

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 1201139317 (9106-0002-014FS) and 167358001 (9106-0002-014FS) were recounted due to high relative percent difference/relative error ratio.

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

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to a high full-width, half maximum.	Bismuth-212	167358001
UI	Data rejected due to low abundance	Actinium-228	1201139316
		Bismuth-214	1201139316
		Lead-212	1201139316
		Lead-214	1201139316
		Potassium-40	1201139316
		Radium-226	1201139316

Method/Analysis Information

Product:	GFPC, Sr90, solid-ALL FSS
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	549724
Prep Batch Number:	549529
Dry Soil Prep GL-RAD-A-021 Batch Number:	549528

Sample ID	Client ID
167358001	9106-0002-014FS
1201139231	Method Blank (MB)
1201139232	167358001(9106-0002-014FS) Sample Duplicate (DUP)
1201139233	167358001(9106-0002-014FS) Matrix Spike (MS)
1201139234	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 167358001 (9106-0002-014FS).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Chemical Recoveries

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Certification Statement

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

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date:



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#06-0755 GEL Work Order: 167358

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the detection limit.

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

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

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

Reviewed by

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

Certificate of Analysis

Company : Address :	Connecticu 362 Injun F	t Yankee A Iollow Rd	tomic Power								
East Hampton, Connecticut 06424 Contact: Mr. Jack McCarthy				Report Date: July 26, 2006							
Project:	Soils PO# (002332									
	Client Sample ID: Sample ID: Matrix: Collect Date: Receive Date: Collector: Moisture:			9106-0002-014FS 167358001 SE 19-MAY-06 02-JUN-06 Client 10.6%		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	<01204 <001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date Tin	1e Batch	Mtđ
Rad Gamma Spec Anal	lysis	•									
Gamma,Solid–FSS GA Waived	1M & ALL FSS	S 226 Ingro	wth						·		
Actinium-228		0.681	+/-0.193	0.0749	+/-0.193	0.164	pCi/g	MJH1	07/25/06 165	6 549751	1
Americium-241	U	-0.0046	+/-0.0284	0.0258	+/-0.0284	0.0536	pCi/g				
Bismuth-212	UI	0.00	+/-0.385	0.155	+/-0.385	0.339	pCi/g				
Bismuth-214		0.502	+/-0.102	0.0358	+/-0.102	0.0773	pCi/g				
Cesium-134	U	0.056	+/-0.041	0.0286	+/-0.041	0.0614	pCi/g				
Cesium-137	U	0.0113	+/-0.0248	0.0224	+/-0.0248	0.048	pCi/g				
Cobalt-60	U	-0.00841	+/-0.025	0.0198	+/-0.025	0.045	pCi/g				
Europium-152	U	-0.00306	+/-0.0528	0.0454	+/-0.0528	0.0969	pCi/g				
Europium-154	U	0.018	+/-0.0721	0.0629	+/-0.0721	0.140	pCi/g				
Europium-155	U	0.0395	+/-0.0502	0.0458	+/-0.0502	0.0954	pCi/g				
Lead-212		0.744	+/-0.0662	0.0285	+/-0.0662	0.0599	pCi/g				
Lead-214		0.570	+/-0.100	0.0325	+/-0.100	0.0695	pCi/g				
Manganese-54	U	0.00657	+/-0.0265	0.0229	+/-0.0265	0.0498	pCi/g				
Niobium-94	U	0.000605	+/-0.0206	0.0177	+/-0.0206	0.0383	pCi/g				
Potassium-40		10.9	+/-1.08	0.152	+/-1.08	0.358	pCi/g				
Radium-226		0.502	+/-0.102	0.0358	+/-0.102	0.0773	pCi/g				
Silver-108m	U	0.00362	+/-0.0184	0.0169	+/-0.0184	0.0362	pCi/g				
Thallium-208		0.241	+/0.0493	0.0193	+/-0.0493	0.0418	pCi/g				
Rad Gas Flow Proporti	onal Countin	g									
GFPC, Sr90, solid-AL	L FSS										
Strontium-90	U	-0.007	+/0.0145	0.0143	+/-0.0145	0.0302	pCi/g	BXF1	07/24/06 172	7 549724	2
The following Prep Me	ethods were p	erformed									
Method Desc	ription				Analyst	Date	Time	e Prep Batch	1		

The following Analytical Methods were performed							
Method	Description						
1	EML HASL 300, 4.5.2.3						
2	EPA 905.0 Modified						

AXP2

07/19/06

1817

549528

Dry Soil Prep

Dry Soil Prep GL-RAD-A-021
GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

Surrogate/	Tracer recov	ery Test				Recovery%	Ac	ceptable Limi	ts	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
		Client Sam Sample ID	ple ID:		9106-000 16735800)2-014FS)1		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	on, Connec Carthy 02332	ticut 06424				F	Report Date: July 26, 2	006
	Company : Address :	Connecticut 362 Injun Ho	Yankee A ollow Rd	tomic Power						

57

(25%-125%)

Carr	ier/T	racer	Reco	verv
c a i				•••

Notes:

The Qualifiers in this report are defined as follows :

* A quality control analyte recovery is outside of specified acceptance criteria

GFPC, Sr90, solid-ALL FSS

- < 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.



			QC	<u>Su</u>	mmary			Report Date: July 26, 2006	
Client :	Connecticut Yankee A 362 Injun Hollow Rd	Atomic Power						Page 1 of 5	
Contact:	East Hampton, Conn Mr. Jack McCarthy	ecticut							
Workorder:	167358								
Parmname		NOM	Sample (Qual	QC	Units	RPD%	REC% Range Anls	t Date Time
Rad Gamma Spe Batch	e 549751								
QC12011393	17 167358001 DUP								
Actinium-228			0.681		0.688	pCi/g	1	(0% - 100%) MJH	1 07/25/06 16:57
		Uncert:	+/-0.193		+/-0.228				
		TPU:	+/-0.193		+/-0.228				
Americium-24		U	-0.0046	U	0.0036	pCi/g	1630	(0% - 100%)	
		Uncert:	+/-0.0284		+/-0.0415				
		TPU:	+/-0.0284		+/-0.0415	0.1	(7	(00(1000()	
Bismuth-212		UI	0.00	U	0.329	pCı/g	6/	(0% - 100%)	
		Uncert:	+/-0.385		+/-0.419				
D:		IPU:	+/-0.385		+/-0.419	•Cila	2	(09/ 1009/)	
BISINUU-214		Lincort	+/ 0.102			pc//g	2	(0% - 100%)	
		TRU.	+/-0.102		+/-0.154				
Cecium-134		IPU:		П	-0.00194	nCi/a	214	(0% - 100%)	
Cesium-194		U Uncert:	+/-0.041	U	+/-0.0372	peng	214	(0/0 100/0)	
		TPU	+/-0.041		+/-0.0372				
Cesium-137		110. 11	0.0113	U	0.0259	pCi/g	78	(0% - 100%)	
Costum vev		Uncert:	+/-0.0248	-	+/-0.0314	P0.8			
		TPU	+/-0.0248		+/-0.0314				
Cobalt-60		11 U.	-0.00841	U	0.000847	pCi/g	245	(0% - 100%)	
		Uncert:	+/-0.025		+/-0.0418	10			
		TPU:	+/-0.025		+/-0.0418				
Europium-152		U	-0.00306	U	-0.04	pCi/g	172	(0% - 100%)	
1		Uncert:	+/-0.0528		+/-0.0664	1 0			
		TPU:	+/-0.0528		+/-0.0664				
Europium-154		U	0.018	U	-0.00385	pCi/g	309	(0% - 100%)	
•		Uncert:	+/-0.0721		+/-0.0955				
		TPU:	+/-0.0721		+/-0.0955				
Europium-155		U	0.0395	U	0.0162	pCi/g	84	(0% - 100%)	
		Uncert:	+/-0.0502		+/-0.0627				
		TPU:	+/-0.0502		+/-0.0627				
Lead-212			0.744		0.702	pCi/g	6	(0% - 20%)	
		Uncert:	+/-0.0662		+/-0.081				
		TPU:	+/-0.0662		+/-0.081				
Lead-214			0.570		0.625	pCi/g	9	(0% - 20%)	
		Uncert:	+/-0.100		+/-0.107				
		TPU:	+/-0.100		+/-0.107	C 11			
Manganese-54		U	0.00657	U	0.00559	pCı/g	16	(0% - 100%)	
		Uncert:	+/-0.0265		+/-0.032				
NI 1 1 04		TPU:	+/-0.0265		+/-0.032	0.1	100		
Niobium-94		U	0.000605	U	0.014	pC1/g	183	(0% - 100%)	
		Uncert:	+/-0.0206		+/-0.0266				
		TPU:	+/-0.0206		+/-0.0266				

QC Summary

		$\underline{\mathbf{v}}$, Su	<u>mmar y</u>							
Workorder: 167358				Page 2 of 5							
Parmname	NOM	Sample (Qual	QC	Units l	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec Batch 549751											
Potassium-40		10.9		9.58	pCi/g	13		(0% - 20%)			
	Uncert:	+/-1.08		+/-1.11	1 0			· · ·			
	TPU:	+/-1.08		+/-1.11							
Radium-226		0.502		0.494	pCi/g	2		(0% - 100%)			
	Uncert:	+/-0.102		+/-0.154							
	TPU:	+/-0.102		+/-0.154							
Silver-108m	U	0.00362	U	0.00577	pCi/g	46		(0% - 100%)			
	Uncert:	+/-0.0184		+/-0.0235							
	TPU:	+/-0.0184		+/-0.0235	0:1-	((00/ 1000/)			
Thallium-208	T	0.241		0.227	pCi/g	0		(0% - 100%)			
	Uncert:	+/-0.0493		+/-0.064							
001201120218	IPU:	+/-0.0493		+/-0.064							
Actinium-228			П	-0.0826	nCi/g					07/23/0	6 23.03
Actinitian 220	Uncert		Ŭ	+/-0 366	P015					01125/0	0 20.00
	TPU			+/-0.366							
Americium-241	23.4			25.8	pCi/g		110	(75%-125%)			
	Uncert:			+/-2.13	P 8			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	TPU:			+/-2.13							
Bismuth-212			U	-0.368	pCi/g						
	Uncert:			+/-0.777							
	TPU:			+/-0.777							
Bismuth-214			U	0.117	pCi/g						
	Uncert:			+/-0.178							
	TPU:			+/-0.178							
Cesium-134			U	-0.0432	pCi/g						
	Uncert:			+/-0.0954							
	TPU:			+/-0.0954							
Cesium-137	9.60			10.2	pCi/g		106	(75%-125%)			
	Uncert:			+/-0.911							
	TPU:			+/-0.911	<u></u>						
Cobalt-60	14./			15.0	pCı/g		102	(75%-125%)			
	Uncert:			+/-0.935							
Europium 152	, TPU:		11	+/-0.935	-Cila						
Europium-132	Uncort		U	-0.0042	pC1/g						
	TDU.			+/-0.217							
Furonium-154	IFU.		П	0.142	nCi/a						
	Uncert		0	+/-0 202	pe#5						
				+/-0.202							
Europium-155	110.		U	-0.0245	nCi/g						
	Uncert:		0	+/-0.304	P.0.8						
	TPU			+/-0.304							
Lead-212			U	0.056	pCi/g						
	Uncert:			+/-0.136	1 0						
	TPU:			+/-0.136							
Lead-214			U	0.0714	pCi/g						
	Uncert:			+/-0.154							

QC Summary

Workorder: 167358	P								age 3 of 5			
Parmname	NOM	Sample Qual	QC	Units R	PD%	REC%	Range	Anlst	Date	Time		
Rad Gamma Spec												
Batch 549751												
	TPU:		+/-0.154									
Manganese-54		· U	-0.0352	pCi/g								
-	Uncert:		+/-0.0898	• -								
	TPU:		+/-0.0898									
Niobium-94		U	0.0196	pCi/g								
	Uncert:		+/-0.0827	•								
	TPU:		+/-0.0827									
Potassium-40		U	-0.0266	pCi/g								
	Uncert:		+/-0.757	-								
	TPU:		+/-0.757									
Radium-226		U	0.117	pCi/g		((75%-125%))				
	Uncert:		+/-0.178									
	TPU:		+/-0.178									
Silver-108m		U	-0.0296	pCi/g								
	Uncert:		+/-0.0823									
	TPU:		+/-0.0823									
Thallium-208		U	0.0283	pCi/g								
	Uncert:		+/-0.0898	-								
	TPU:		+/-0.0898									
QC1201139316 MB												
Actinium-228		UI	0.00	pCi/g					07/23/0	6 23:02		
	Uncert:		+/-0.0206									
	TPU:		+/-0.0206									
Americium-241		U	0.000573	pCi/g								
	Uncert:		+/-0.0291									
	TPU:		+/-0.0291									
Bismuth-212		U	0.0249	pCi/g								
	Uncert:		+/-0.0402									
	TPU:		+/-0.0402									
Bismuth-214		UI	0.00	pCi/g								
	Uncert:		+/-0.012									
	TPU:		+/-0.012									
Cesium-134		U	0.00736	pCi/g								
	Uncert:		+/-0.00599									
	TPU:		+/-0.00599									
Cesium-137		U	0.000658	pCi/g								
	Uncert:		+/-0.0128									
	TPU:		+/-0.0128									
Cobalt-60		U	0.00664	pCi/g								
	Uncert:		+/-0.00569									
	TPU:		+/-0.00569									
Europium-152		U	0.00871	pCi/g								
	Uncert:		+/-0.0124									
	TPU:		+/-0.0124									
Europium-154		U	0.00596	pCi/g								
	Uncert:		+/-0.0157									
	TPU:		+/-0.0157									
Europium-155		U	0.00413	pCi/g								

Parmanne NOM Sample Qual QC Units RPD% REC% Range Anist Date Time Rach 549751 Uncert: +/-0.0126	Workorder:	167358			l.	Page 4 of 5								
Rad Samonal Series Say 5731 Back 549751 Lad-212 Uncert: 1/4.0.0126 TPU: -1/4.0.000 TPU: -1/4.0.0001 Decert: -1/4.0.0001 Lead-214 Uncert: -1/4.0.018 TPU: -1/4.0.018 -1/4.0.018 Manganese-54 Uncert: +1/0.0108 Uncert: +1/0.00052 CV/g Nobium-94 Uncert: +1/0.00052 Uncert: +1/0.00052 CV/g Store: -1/4.0.00645 CV/g Store: -1/4.0.0045 PCV/g Store: -1/4.0.0045 PCV/g TPU: -1/4.0.0045 PCV/g TPU: -1/4.0.0150 <th>Parmname</th> <th></th> <th colspan="2">NOM</th> <th colspan="3">NOM Sample Qua</th> <th>Units</th> <th>RPD%</th> <th>REC%</th> <th>6 Range</th> <th>Anlst</th> <th>Date</th> <th>Time</th>	Parmname		NOM		NOM Sample Qua			Units	RPD%	REC%	6 Range	Anlst	Date	Time
Banch 549751 Land-212 Uncert: $+70.0126$ TPU: $+70.0126$ Uncert: $+70.0091$ Uncert: $+70.0091$ Uncert: $+70.0091$ Manganese-54 U1 0.00 pCi/g Manganese-54 U1 0.000 pCi/g TPU: $+70.0108$ TPU: $+70.0087$ TPU: $+70.0087$	Rad Gamma Sp	ec												
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Batch	549751												
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				Uncert:			+/-0.0126							
				TPU:			+/-0.0126							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Lead-212					UI	0.00	pCi/	g					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				Uncert:			+/-0.0091							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				TPU:			+/-0.0091							
$\begin{tabular}{ c $	Lead-214					UI	0.00	pCi/	g					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				Uncert:			+/-0.0108							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				TPU:			+/-0.0108							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Manganese-54					U	-0.000149	pCi/	g					
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$				Uncert:			+/-0.00597							
Niobium-94 U 0.00445 pCi/g Uncert: +/-0.00562 Potassium-40 UI 0.00 Uncert: +/-0.00645 Radium-226 UI				TPU:			+/-0.00597							
$\begin{tabular}{ c c c c c c c c c c c c c $	Niobium-94					U	0.00445	pCi/	g					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				Uncert:			+/-0.00562							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				TPU:			+/-0.00562							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Potassium-40					UI	0.00	pCi/	g					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				Uncert:			+/-0.0645							
Radium-226 UI 0.00 pCi/g Uncert: $+/-0.012$ TPU: $+/-0.012$ Silver-108m U 0.00402 pCi/g TPU: $+/-0.00406$ TPU: $+/-0.00406$ TPU: $+/-0.00406$ TPU: $+/-0.00406$ TPU: $+/-0.00406$ TPU: $+/-0.00406$ TPU: $+/-0.00406$ CV 0.00908 pCi/g Uncert: $+/-0.0056$ Rad Cas Flow Batch 549724 QC1201139232 167358001 DUP Strontium-90 U -0.007 U 0.00548 pCi/g 0 (0% - 100%) BXF1 07/24/06 17:27 Uncert: $+/-0.0145$ $+/-0.0205$ QC1201139234 LCS QC1201139234 LCS Strontium-90 I.42 I.14 pCi/g 81 (75%-125%) 07/24/06 17:27 Uncert: $+/-0.0145$ $+/-0.0205$ QC1201139231 MB Strontium-90 I .42 U 0.0153 pCi/g QC1201139231 MB Strontium-90 I.42 U -0.007 I .37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: $+/-0.0145$ $+/-0.0164$ TPU: $+/-0.0145$ $+/-0.0748$				TPU:			+/-0.0645							
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	Radium-226					UI	0.00	pCi/	g					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				Uncert:			+/-0.012							
Silver-108m U 0.00402 pC/g Uncert: +/-0.00406 +/-/0.00406 TPU: +/-0.00908 pCi/g Uncert: +/-0.0056 +/-/0.0056 TPU: +/-0.0056 +/-/0.0056 Rad Gas Flow Batch 549724 U -0.007 U 0.00548 pCi/g 0 (0% - 100%) BXF1 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0205 - QC1201139232 167358001 DUP Strontium-90 I.42 I.114 pCi/g 81 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0205 - QC1201139234 LCS Strontium-90 I.42 I.114 pCi/g 81 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0153 pCi/g - QC1201139231 MB Strontium-90 I.42 U -0.007 - 1.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0145 +/-0.0145 - TPU: +/-0.0145 - TPU				TPU:			+/-0.012							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Silver-108m					U	0.00402	pCı/	g					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				Uncert:			+/-0.00406							
Thalhum-208 U 0.00908 pC/g Uncert: $+/-0.0056$ Rad Gas Flow Batch 549724 QC1201139232 167358001 DUP Strontium-90 U -0.007 U 0.00548 pCi/g 0 (0% - 100%) BXF1 07/24/06 17:27 Uncert: $+/-0.0145$ $+/-0.0205$ QC1201139234 LCS Strontium-90 I.42 I.14 pCi/g 81 (75%-125%) 07/24/06 17:27 Uncert: $+/-0.0145$ $+/-0.0591$ QC1201139231 MB Strontium-90 U 0.0153 pCi/g Uncert: $+/-0.0164$ TPU: $+/-0.0165$ Strontium-90 I.42 U -0.007 I.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: $+/-0.0145$ $+/-0.0748$				TPU:			+/-0.00406							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Thallium-208					U	0.00908	pCi/	g					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				Uncert:			+/-0.0056							
Rad Gas Plow Batch 549724 QC1201139232 167358001 DUP Strontium-90 U -0.007 U 0.00548 pCi/g 0 (0% - 100%) BXF1 07/24/06 17:27 QC1201139234 LCS TPU: +/-0.0145 +/-0.0205 PCi/g 81 (75%-125%) 07/24/06 17:27 QC1201139234 LCS Uncert: +/-0.0145 +/-0.0205 PCi/g 81 (75%-125%) 07/24/06 17:27 QC1201139231 MB U 0.0153 pCi/g Uncert: +/-0.0164 PCi/g 81 (75%-125%) 07/24/06 17:27 QC1201139231 MB U 0.0153 pCi/g 0 0 0.0153 pCi/g 0 QC1201139233 167358001 MS Uncert: +/-0.0165 - 07/24/06 17:27 QC1201139233 167358001 MS - - - - - - - - - - - - - - - - -				TPU:			+/-0.0056							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Rad Gas Flow	640774												
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Batch	549724												
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	QC12011392	167358001	DUP											
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Strontium-90			U	-0.007	U	0.00548	pCi/	g 0		(0% - 100%)	BXFI	07/24/06	5 17:27
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				Uncert:	+/-0.0145		+/-0.0205							
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				TPU:	+/-0.0145		+/-0.0205							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	QC12011392	LCS		1.40				0.1		01	(750/ 1050/)		07/24/04	
$\begin{array}{cccccccc} & & & & & & & & & & & & & & & $	Strontium-90			1.42			1.14	pC1/g	g	81	(75%-125%)	I	07/24/06) 17:27
$\begin{array}{cccccccc} & & & & & & & & & & & & & & & $				Uncert:			+/-0.0482							
U 0.0153 pCi/g Uncert: +/-0.0164 TPU: +/-0.0165 Strontium-90 1.42 U -0.007 1.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0748 TPU: +/-0.0145 +/-0.082	0010011000			TPU:			+/-0.0591		•					
Uncert: +/-0.0164 TPU: +/-0.0165 Strontium-90 1.42 U -0.007 1.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0748 TPU: +/-0.0145 +/-0.082	QC12011392 Strontium 90	31 MB				TI	0.0153	nCi/	•					
QC1201139233 167358001 MS Strontium-90 1.42 U -0.007 1.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0748 TPU: +/-0.0145 +/-0.082	Submum-90			Uncert		U	+/-0.0155	pent	5					
QC1201139233 167358001 MS Strontium-90 1.42 U -0.007 1.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0748 TPU: +/-0.0145 +/-0.082							+/-0.0104							
Strontium-90 1.42 U -0.007 1.37 pCi/g 96 (75%-125%) 07/24/06 17:27 Uncert: +/-0.0145 +/-0.0748 TPU: +/-0.0145 +/-0.082	0012011302	33 167358001	MS	TPU:			0.0103							
Uncert: +/-0.0145 +/-0.0748 TPU: +/-0.0145 +/-0.082	Strontium-90	.55 107550001	1410	1.42 11	-0.007		1.37	nCi/s	7	96	(75%-125%)		07/24/06	17.27
TPU: $+/-0.0145$ $+/-0.082$				Uncert:	+/-0.0145		+/-0.0748	r 0 / f	2	20	(0,12,100	. , /
				TPU	+/-0.0145		+/-0.082							

OC Summarv

Notes:

The Qualifiers in this report are defined as follows:

TPU:

QC Summary

Workor	der: 167358							Page :	5 of 5		
Parmnan	ne	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
*	A quality control	analyte recovery is outside of s	specified acceptance crit	eria							
<	Result is less that	n value reported									
>	Result is greater t	than value reported									
А	The TIC is a susp	pected aldol-condensation produ	uct								
в	Target analyte wa	as detected in the associated bla	ınk								
BD	Results are either	below the MDC or tracer record	very is low								
С	Analyte has been	confirmed by GC/MS analysis									
D	Results are report	ted from a diluted aliquot of the	e sample								
Н	Analytical holdin	g time was exceeded									
J	Value is estimate	d									
N/A	Spike recovery li	mits do not apply. Sample con-	centration exceeds spike	concentrat	ion by 43	(or more					
R	Sample results ar	e rejected									
U	Analyte was anal	yzed for, but not detected above	e the MDL, MDA, or LO	DD.							
UI	Gamma Spectros	copyUncertain identification									
Х	Consult Case Nar	rrative, Data Summary package	, or Project Manager cor	ncerning th	is qualifie	r					
Y	QC Samples were	e not spiked with this compound	d								
^	RPD of sample at	nd duplicate evaluated using +/	-RL. Concentrations are	e <5X the R	ιL.						
h	Preparation or pre	eservation holding time was exe	ceeded								
N/A indie ** Indica ^ The Re sample is	cates that spike rea ites analyte is a su lative Percent Diff greater than	covery limits do not apply when rrogate compound. ference (RPD) obtained from th five times (5X) the contract red	n sample concentration e ne sample duplicate (DL quired detection limit (R	exceeds spi JP) is evalu L). In case	ke conc. ł ated agai s where e	by a factor of a f	of 4 or more. ptence criter nple or dupl	ia when the	is		

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):

<u>Sample ID</u>	<u>Client Sample ID</u>
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

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

Page 2 of 105

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.

aughtin

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

	Content-Description:	GEL FSSALL analyses request.xls			
GEL FSSALL analyses request.xls	Content-Type:	application/vnd.ms-excel			
:	Content-Encoding:	base64	;		
· · · · · · · · · · · · · · · · · · ·	··· ·· · · · · ·				

			Done					To be done					
Previous	CY sample location IDs	FSS Gam	Sr-90	Ni-63	Am	Pu	Sr90	Pu241	Fe55	Ni63	Tc99	H3	<u>C14</u>
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	<u>x</u>	<u>x</u>
0162335004	9106-0003-004F	x			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	<u>x</u>
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	X	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
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	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 H	ankee At Hollow Road, E 860-267	omic Po ast Hampton, -2556	wer C , CT 06424	ompan	у			Cha	ain of (Custody	Form No.	2006-00371
ਰ	Project Name: Haddam Ne	eck Decomn	issioning					A	nalyses	Requested		Lab Use Only	
S.	Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext. 3	3024									Comments:	
	Analytical Lab (Name, Cit General Engineering Labor 2040 Savage Road. Charles 843 556 8171. Attn. Chery	107				SSGAM	SSALL	lr-90					
	Priority: 🛛 30 D. 🗌 14 D). 🗍 7 D.			Sample	Container Size-						164	220%
	Sample Designation	Date	Time	Code	Code	Code	[Comment, Preservation	Lab Sample ID
t	9106-0002-001F	5/17/06	10:42	SE	C	BP	X		X			Transferred from COC 2006-00357	
Ī	9106-0002-002F	5/18/06	09:43	SE	C	BP		X				Transferred from COC 2006-00361	
t	9106-0002-003F	5/18/06	10:14	SE	С	BP	X		X			Transferred from COC 2006-00361	·
Ī	9106-0002-004F	5/18/06	10:39	SE	С	BP	X	1	X			Transferred from COC 2006-00361	
ľ	9106-0002-005F	5/18/06	12:49	SE	С	BP	X		X			Transferred from COC 2006-00364	
Ī	9106-0002-006F	5/18/06	13:14	SE	С	BP	X	1	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	
Ī	9106-0002-008F	5/18/06	14:04	SE	C	BP	X		X			Transferred from COC 2006-00364	
	NOTES: PO #: 002332 N	MSR #: 06- งา ร <u>ร</u>	SSWP# N 5	A	LTP QA		lwaste	QA	🗌 No	on QA		Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed?
	la Relinquished By	61	Date/Tim	ime 2) Received By Date/Time 0815 August 6.06.06 9:20					ne 7'.20	D Other	Custody Seal Intact?		
	5) Relinquished By		Date/Tim	1e 4) Received By Date/Time 1e 6) Received By Date/Time					ne	Bill of Lading # 7909 4145 5710			

Connecticut 362 Injun	Vankee Ato Hollow Road, Ea	omic Po ast Hampton,	wer C (. CT 06424	ompan;	y			Cha	ain of Cus	stody	Form No.	2006-00372		
Project Name: Haddam N	Neck Decomm	issioning			<u> </u>		A	1alyses	Requested	·	Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267	7-2556 Ext. 3	024									Comments:			
Analytical Lab (Name, C General Engineering Lab 2040 Savage Road. Charl 843 556 8171. Attn. Cher	Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones Priority: 2 30 D. 14 D. 7 D.		nalytical Lab (Name, City, State) eneral Engineering Laboratories 40 Savage Road. Charleston SC. 29407 3 556 8171. Attn. Cheryl Jones					SSGAM	SSALL	3r-90				
Priority: 🛛 30 D. 🗌 14				Sample	Container Size-									
Sample Designation	Date	Time	Code	Code	Code						Comment, Preservation	Lab Sample ID		
9106-0002-009F	5/18/06	14:28	SE	C	BP		X				Transferred from COC 2006-00364	ļ		
9106-0002-010F	5/18/06	14:50	SE	C	BP	X		X			Transferred from COC 2006-00364	ļ		
9106-0002-011F	5/19/06	08:10	SE	C	BP	X		X			Transferred from COC 2006-00365	L		
9106-0002-012F	5/19/06	08:31	SE	C	BP	X		X			Transferred from COC 2006-00365	L		
9106-0002-013F	5/19/06	09:00	SE	C	BP	X		X			Transferred from COC 2006-00365	ļ		
9106-0002-014F	5/19/06	09:58	SE	C	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			
9106-0002-015F	5/19/06	10:29	SE	C	BP	X		X			Transferred from COC 2006-00365	1		
9106-0002-016F	5/19/06	13:19	SE	C	BP	X		X			Transferred from COC 2006-00365			
NOTES: PO #: 002332	MSR #: 06- 0755	SSWP# N	IA 🖾	LTP QA	🗌 Rac	lwaste	QA	🗌 No	on QA		Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody		
1) Relinquished By	26	Date/Tin	ne 875	2) Rect	ived By		(<u>o-2.06</u>	Date/Time	<u>}</u>	Other	Custody Seal Intact?		
3) Relinquished By)	Date/Tin	ne	4) Rece	ived By				Date/Time		Bill of Lading #	Y D N D		
5) Relinquished By		Date/Tin	ne	6) Rece	ived By				Date/Time					

Connecticut Yankee Statement of Work for Analytical Lab Services CY-ISC-SOW-001 Figure 1. Sample Check-in List Date/Time Received: SR#06-075 SDG#: 4220% Work Order Number 2006 104 Shipping Container ID: Chain of Custody # 1. Custody Seals on shipping container intact? Yes X No [2. Custody Seals dated and signed? Yes P No Chain-of-Custody record present? 3. Yes [🔏 No [] 4. Cooler temperature 5. Vermiculite/packing materials is: Wet [] Dry [] 100 Bo Number of samples in shipping container: 6. 7. Sample holding times exceeded? Yes [] No X 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: TIN 6206 Date Telephoned to: On

Page 9 of 105

Connecticut Yankee CY-ISC-SOW-00 Statement of Work for Analytical Lab Services Figure 1. Sample Check-in List Date/Time Received NSR#06-0755 SDG#: 164220% Work Order Number Chain of Custody # 2006 = 00372 5101 Shipping Container ID: 1909 Yes (No [] Custody Seals on shipping container intact? 1. Yes [] No [] Custody Seals dated and signed? 2. Yes [] No [] Chain-of-Custody record present? 3. Cooler temperature 4. Wet [] Dry [] hopockins Vermiculite/packing materials is: 5. Number of samples in shipping container: 6. Yes [] No [Sample holding times exceeded? 7. 8. Samples have: hazard labels tape appropriate sample labels custody seals 9. Samples are: in good condition leaking broken have air bubbles 10. Yes [] No [/] Were any anomalies identified in sample receipt? 11. Description of anomalies (include sample numbers): -206 Sample Custodian/Laboratory: Date Telephoned to: On

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TATORIE'S'				PM use only						
Client: Connecticut Yon	Kre			SDG/ARCOC/Work Order: 164220						
Date Received: 6. 2.06				PM(A) Review (ensure non-conforming items are resolved prior to signing):						
Received By:			_	· Clivelon						
r		<u> </u>		Γ <i>ΓΥ</i>						
Sample Receipt Criteria	Yes	NA	°Z	Comments/Qualifiers (Required for Non-Conforming Items)						
1 Shipping containers received int 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)						
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?		Ι		Sample ID's, containers affected and observed pH:						
6 VOA vials free of headspace (defined as < 6mm bubble)?		1	S	ample ID's and containers affected:						
7 (If yes, immediately deliver to VOA laboratory)	T									
Samples received within holding time?			Id	's and tests affected:						
Sample ID's on COC match ID's on bottles?			Sa	mple ID's and containers affected:						
Date & time on COC match date & time on bottles?			Sa	mple ID's affected:						
Number of containers received match number indicated on COC?			San	nple ID's affected:						
COC form is properly signed in relinquished/received sections?				Coc # 2006-00371						
Air Bill ,Tracking #'s, & Additional Comments										
Suspected Hazard Information	Non- Regulated Regulated	High Level	RSC *If regu	 RAD Receipt #						
PCB Regulated?	74		Max	imum Counts Observed*: 25 CPM						
Shipped as DOT Hazardous	<u>~</u>		Com	ments:						
Material? If yes, contact Waste Haz			Haza	ard Class Shipped:						
Manager or ESH Manager.			UN#:							
(or PMA) review of Hazard classif	ication:			Initials Color Datas (al-						
Page 11 of 105				Daie. 012106						

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	PATORIES,				PM use only						
	Emil Con Dieg French YANKo	<u></u>			SDG/ARCOC/Work Order: 164220						
E	HERE: CONTRECTION LATA	<u> </u>			PM(A) Review (ensure non-conforming items are resolved prior to signing):						
٣	are vecenven: (2-01-020				Clerk						
R	eceived By: Of										
					9/1						
	Sample Receipt Criteria	Kei	N N	Ż	Comments/Qualifiers (Required for Non-Conforming Items)						
	Shipping containers received intac	t			Circle Applicable: seals broken damaged container leaking container other (describe)						
Ľ	and sealed?	_		_	Circle Content # instance blue inc. dry inc. none other describe)						
	Samples requiring cold				Circle Coolania a Rebulgs blac ite di y ite inone continuery						
	preservation within $(4 + 7 - 2 C)$?			1							
\vdash	Chain of custody documents	+			///////////////////////////////////////						
13	included with shinment?										
F	Sample containers intact and	1			Circle Applicable: seals broken damaged container leaking container other (describe)						
14	sealed?										
Γ	Samples requiring chemical	Γ	T		Sample ID's, containers affected and observed pH:						
Ľ	preservation at proper pH?	ļ	┶	\downarrow							
6	VOA vials free of headspace	1		1	Sample ID's and containers affected:						
L	(defined as < 6mm bubble)?	┨───	K	_							
[,	Are Encore containers present?	1 /									
ľ	VOA laboratory)	V									
	Samples received within holding	}			ld's and tests affected:						
8	time?										
0	Sample ID's on COC match ID's				Sample ID's and containers affected:						
_	on bottles?		j								
10	Date & time on COC match date				Sample ID's affected:						
	& time on bottles?				Samole ID'r offeriai						
11	Number of containers received										
	COC form is proportiu signed in										
12	coc form is properly signed in relinquished/received sections?				(oc # 20(0-00271 ALL 6/2/4						
14	Air Bill ,Tracking #'s, &										
14	Additional Comments				1						
			.								
	1	rted	Β	e vel	RSO RAD Receipt #						
	Suspected Hazard Information	Non	l and a	1	regulated/non-radioactive", contact the Radiation Safety group for further						
		Re	å	Ë	nvestigation.						
A	Radiological Classification?	—	$\mathbf{\nabla}$		Maximum Counts Observed*: 20CPM						
D	Shipped as DOT Hazardous				Comments:						
c	Material? If yes, contact Waste	,		F	lazard Class Shipped:						
	Manager or ESH Manager.			Į	JN#:						
li	PM (or PMA) review of Hazard class	v ificati	on:		Initials Date: Color Of						
		_			Dail. 4400						
	Page 12 of 105				V						

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Page 13	Connecticut Y: 362 Injun H	ankee Ate ollow Road, Ea 860-267-	omic Por ast Hampton, -2556	wer C CT 06424	ompan	y	+6	233	Cha 47	in of	f Cus ,233	toc 5 /	ly Form CD 5/8/04	No. 2006-00312
of	Project Name: Haddam Ne	ck Decomm	issioning			T		Ana	yses Re	queste	d		Lab Use Only	
105	Contact Name & Phone: Jack McCarthy 860-267-2	2556 Ext. 3	024							·]			Comments:	
	Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones		07				FSSGAM	FSSALL	Sr-90					
		. Li / D.			Sample	Container Size-					1		• • • • • • • •	
	Sample Designation	Date	Time	Media Code	Type Code	&Type Code							Comment, Preservation	Lab Sample ID
' 10'	9106-0003-001F	4/24/06	14:13	SE	С	BP	X						Transferred from COC2006-00221	an a
r	9106-0003-002F	4/24/06	14:39	SE	C	BP	x					++	Transferred from COC2006-00221	
13	9106-0003-003F	4/24/06	15:01	SE	Č	BP	X					1-1	Transferred from COC2006-00221	
t	9106-0003-004F	4/25/06	08:41	SE	Ċ	BP	X	t					Transferred from COC2006-00223	
5	9106-0003-004FS	4/25/06	08:41	SE	C	BP	X		<u> </u>				Transferred from COC2006-00223	
ok	9106-0003-005F	4/25/06	09:21	SE	C	BP	X	1			[Transferred from COC2006-00223	
5	9106-0003-006F	4/25/06	09:46	SE	С	BP	X	1	1		1		Transferred from COC2006-00223	· · · · · · · · · · · · · · · · · · ·
Ð	9106-0003-007F	4/25/06	10:28	SE	C	BP	X	1					Transferred from COC2006-00223	
S.C.	9106-0003-008F	4/25/06	11:15	SE	C	BP	i	X					Transferred from COC2006-00223	
NOTES: PO #: 002332 MSR #: 06- ⁶⁵² SSWP# NA X LTP QA Combined samples 9106-0003-003F taken on 4/25/06 @08:19 and 9106-0003-003FB taken on 4/25/0						TP QA on 4/25/06@	Radwaste QA Non QA @ 08:19 in order to have sufficient sample for cou					nting.	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp:Deg. C Custody Sealed? Y □ N □
	1) Relinquished By JAIME RICARTE.	5-4	Date/Tim	ie 30	2) Rece	ived By	tto		5/5	Date	'Time / \	5	Other	Custody Seal Intact?
	3) Relinquished By	·	Date/Tim	le	4) Rece	ived By	·		<u> </u>	Date/	Time	<u></u>	Bill of Lading #	YCI NC
	5) Relinquished By	· · · · · · · · · · · · · · · · · · ·	Date/Tim	le	6) Rece	ived By	Date/Time				7920-8920-0240			

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

Page 14	Connecticut Y 362 Injun H	ankee Ato Iollow Road, Ea	o mic Po v ast Hampton,	wer Co CT 06424	ompan	y		11.9	Cha	in of	Cus	tody	Form	No. 2006-00313
of	Project Name: Haddam No	860-267-	-2556	i				Analy	vses Ren	mested			se Only	
105	Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext. 3	6024					Anai				Cóm	ments:	
	Analytical Lab (Name, Cit General Engineering Labor 2040 Savage Road. Charle 843 556 8171. Attn. Cher	y, State) ratories ston SC. 294 yl Jones	07				FSSGAM	FSSALL	Sr-90					
Ĭ	Priority: 🛛 30 D. 🗌 14 D	D. 🗌 7 D.		Media	Sample	Container Size-								
	Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation	Lab Sample ID
wq	9106-0003-009F	4/25/06	13:00	SE	C	BP	X					Trans	ferred from COC 2006-00236	
010	9106-0003-010F	4/25/06	13:23	SE	С	BP	X					Trans	ferred from COC 2006-00236	
110	9106-0003-010FS	4/25/06	13:23	SE	C	BP	X					Trans	ferred from COC 2006-00236	
012	9106-0003-012F	4/25/06	15:12	SE	C	BP	X					Trans	ferred from COC 2006-00236	
015	9106-0003-013F	4/25/06	14:21	SE	С	BP	X					Trans	ferred from COC 2006-00236	
019	9106-0003-014F	4/25/06	14:48	SE	С	BP		X				Trans	ferred from COC 2006-00236	
all	9106-0003-015F	4/26/06	08:16	SE	C	BP	X				_	Trans	ferred from COC 2006-00237	
	9106-0003-016F	4/26/06	09:41	SE	C	BP	X					Trans	ferred from COC 2006-00237	
n l	9106-0003-017F	4/26/06	09:18	SE	C	BP	X				!	Trans	sferred from COC 2006-00237	
6	-9106-0003-018F	4/26/06	08:59	SE	C	BP	X					Trans	sferred from COC 2006-00237	
	NOTES: PO #: 002332	MSR #: 06- ⁶	56 52 SSV	WP# NA] LTP QA		Radw	aste QA		Non Q	A	Samples Shipped Via: Fed Ex UPS Hand	futernal Container. Temp: Deg C Custody Sealed?
	1) Relinquished By JAIME RICHETE.	ى	Date/Tim 1-06 / 13	1e 30	2) Rece	ived By	cot	D	5/5	Date/	Fime 1015	5	☐ Other	Custody Seal Intact
	3) Relinquished By		Date/Tin	ne	4) Rece	eived By				Date/	Гime		Bill of Lading # 7920-8920-0261	

T.	Ľ٨	٠.	~	1
-	*	L.	19	1

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· .	Crery		102000		•
Connecticut Yankee Statement of Work for A	Analytical Lab Services		(CY-ISC-SOW-00	<u>1</u>
Date/Time Received:	Figure 1. Samp 5/09/10	le Check-in List $0/5$,			
SDG#:	M5R#06-0	0652			•
Work Order Number:	162335	•	·	· · · · · · · · · · · · · · · · · · ·	
Shipping Container ID: 1. Custody Seals or	n shipping container intact?	Chain of Custody)	# <u>2006</u> 2006 Yes [] No	- 00312 - 00313 X	
2. Custody Seals da	ated and signed?		Yes [] No]	X.	
3. Chain-of-Custod	ly record present?	. · ·	Yes 🗶 No []	:
4. Cooler temperatu	ure]9•¢				· ·
/. Sample holding t	umes exceeded?	· · · · · · · · · · · · · · · · · · ·	Yes [] No 👂	I.	· · ·
8. Samples have: 	hazard l	abels iate sample labels			
 8. Samples have: tape custody sea 9. Samples are: in good co broken 	hazard l llsappropr onditionleakin have	abels iate sample labels ag air bubbles			
 8. Samples have: tape custody sea 9. Samples are: in good co broken 0. Were any anomalia 1. Description of anomalia 	hazard l lsappropri- onditionleakin have es identified in sample receip malies (include sample numb	abels iate sample labels ag air bubbles t? pers):	Yes [] No [X		
 8. Samples have: tape custody sea 9. Samples are: in good co broken 0. Were any anomalia 1. Description of anomalia 	hazard l lsappropri- onditionleakin have es identified in sample receip malies (include sample numb	abels iate sample labels ag air bubbles t? pers):	Yes [] No [X		
 8. Samples have: tape custody sea 9. Samples are: in good co broken 0. Were any anomalia 1. Description of anon ample Custodian/Laborato 	hazard l alsappropri- anditionleakin have es identified in sample receip malies (include sample numb ory:(L_i) e (vi cofficient)	abels iate sample labels ag air bubbles t? pers): D	Yes [] No [X ate: <u>5/5/0</u>	26	
 8. Samples have: tape custody sea 9. Samples are: in good co broken 0. Were any anomalia 1. Description of anon ample Custodian/Laborato ephoned to: 	hazard l lsappropri- malitionleakin have es identified in sample receip malies (include sample numb on on on	abels iate sample labels ag air bubbles t? pers):D By	Yes [] No [X ate: <u>5/5/0</u>	26	

Page 15 of 105

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Client: GUKEC SDG/ARCOC/Work Order: Date Received: GOA 5/5/6/6 PM(A) Review (ensure non-conforming items are resolved prior to signing) Received By: C Dervice + C Sample Receipt Criteria SZZZ Z Comments/Qualifiers (Required for Non-Conforming Items)								
Date Received: (a) A 5/5/0/6 PM(A) Review (ensure non-conforming items are resolved prior to signing) Received By: C, Dervi co Hi Compared for Non-Conforming Items) Sample Receipt Criteria S 2 2 Comments/Qualifiers (Required for Non-Conforming Items)								
Received By: C. Dervicotic Cuple Sample Receipt Criteria 3 2 2 Comments/Qualifiers (Required for Non-Conforming Items)								
Sample Receipt Criteria								
Sample Receipt Criteria	_							
Sample Receipt Criteria $\sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i$								
1 Shipping containers received intact								
and sealed?	ribel							
Samples requiring cold $\frac{1}{2}$ preservation within $(4 \pm 1/2)^2$	フ							
Record preservation method								
Chain of custody documents								
³ included with shipment?								
Sample containers intact and Circle Applicable: seals broken damaged container leaking container other (describe)								
⁴ sealed?								
5 Samples requiring chemical Sample ID's, containers affected and observed pH:								
preservation at proper pH?								
6 VOA vials free of headspace								
(defined as < 6mm bubble)?								
Are Encore containers present?	ļ							
VOA laboratory)								
Samples received within holding	-1							
8 time?								
Sample ID's on COC match ID's Sample ID's and containers affected:								
on bottles?								
10 Date & time on COC match date Sample ID's affected:	\neg							
& time on bottles?								
11 Number of containers received								
match number indicated on COC?	_							
12 COC form is properly signed in	1							
reinquisned/received sections?								
Air Bill Tracking #'s. & TRACK + 7970 8970 02.61								
Additional Comments								
ट्र ट्र हि RSO RAD Receipt #								
Suspected Hazard Information								
$\alpha' \alpha' \alpha$								
A Radiological Classification? Maximum Counts Observed*: 30 CPM	-							
B PCB Regulated? Comments:								
A Material? If yes contact Waste Hazard Class Shipped:	7							
Manager or ESH Manager.	JN#:							
PM (or PMA) review of Hazard classification:								
Base 16 - 6105								

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Page 16 of 105

Connecticut 362 Inju	Yankee At	tomic Po East Hampton, 7-2556	wer C , CT 06424	ompan 4	y			Cha	ain o	f C	ustody	y Form	No. 2006-00336
Project Name: Haddam	Neck Decomm	nissioning					Anal	yses Re	quested		Eab	Lise Only a start of the	
Contact Name & Phone: Jack McCarthy 860-26	: 57-2556 Ext.	3024									Cor	nmenusa	
Analytical Lab (Name, C General Engineering Lal 2040 Savage Road. Char 843 556 8171. Attn. Ch	407				SSGAM	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	te La Sample ID
9106-0004-001F	05/3/06	09:37	SE	С	BP		X	X			Tran	sferred from COC 2006-00316	
9106-0004-002F	05/3/06	09:56	SE	C	BP	X		X			Tran	sferred from COC 2006-00316	
9106-0004-003F ·	05/3/06	10:28	SE	C	BP	X.		X			Tran	sferred from COC 2006-00316	
9106-0004-004F	05/3/06	10:48	SE	C	BP	X		X			Tran	sferred from COC 2006-00316	
9106-0004-004FS	05/3/06	10:48	SE	C	BP	X		X			Tran	sferred from COC 2006-00316	
9106-0004-005F	05/3/06	11:07	SE	C	BP	X		X			Tran	sferred from COC 2006-00316	
9106-0004-006F	05/3/06	12:46	SE	C	BP	X		X			Tran	sferred from COC 2006-00317	
9106-0004-007F	05/4/06	07:55	SE	С	BP	X		X			Tran	sferred from COC 2006-00320	
9106-0004-017F	05/4/06	09:27	SE	C	BP	X		X			Tran	sferred from COC 2006-00320	
NOTES: PO #: 002332	MSR #: 06- 0	L	 P# NA		LTP QA		l Radwas	te QA	1	Non (QA	Samples Shipped Via: Fed Ex UPS Hand	dinemal Container Algenp J 2 Det C Guspey Scaled?
1) Relinquished By Date/Tin				2) Recei	сłЪ			Date	Time	0970	D Other	Constody Seak Interch	
3) Relinquished By Date/Tim				4) Recei	ved By	<u>AI (6H5 5]12 (010 0970</u> Bill of Lading # 				Bill of Lading # 7919-3895-8881			

GPP-GGGR-R5104-003-Attachment B-CY-001 Major Health Physics Procedure 3334 **Chain of Custody Form** No. 2006-00337 **Connecticut** Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556 Project Name: Haddam Neck Decommissioning Analyses Requested 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 · Bub Sample ID Comment, Preservation Sample Designation Time Date Code Code Code Transferred from COC 2006-00320 9106-0004-008F 5/04/06 08:58 SE C BP Х Х Transferred from COC 2006-00320 9106-0004-009F 5/04/06 08:23 SE C BP Х X Transferred from COC 2006-00317 9106-0004-010F 5/03/06 C X X 15:11 SE BP Transferred from COC 2006-00317 X 9106-0004-010FS 5/03/06 15:11 SE C Х BP Transferred from COC 2006-00317 9106-0004-011F· 5/03/06 13:08 SE C BP Х X Transferred from COC 2006-00317 9106-0004-012F 5/03/06 13:33 SE C BP Х X 9106-0004-013F Transferred from COC 2006-00317 5/03/06 13:54 SE C BP X X N & 7 / 12 20 9106-0004-014F ~ 5/03/06 Х Transferred from COC 2006-00317 14:43 SE С BP Х Transferred from COC 2006-00317 9106-0004-015F 🖌 5/03/06 Х X 14:18 SE C BP Internal Container Samples Shipped Via: NOTES: PO #: 002332 MSR #: 06-0689 SSWP# NA Radwaste QA \square LTP OA Non OA Fed Ex UPS Temp. // Deg. Hand Custody Seal Intact? 1) Relinguished By Date/Time Date/Time Received By Other 51206 09:20 3) Relinquished By Revel By Date/Time Date/Time Bill of Lading # 7919 3895 8892

Connecticut Yankee	
Statement of Work for Analytical Lab Services	

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Figure 1. Sam	plc Check-in List
Date/Time Received: 5. 12. 06	09:20
SDG#: MSR#06-0688	
Work Order Number: 162832 1.	·
Shipping Container ID: 7919 3895 8892	Chain of Custody # 2006 - 60337
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	NA
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:	
<u>k</u> tape haza	rd labels
custody sealsappro	opriate sample labels
9. Samples are:	
in good conditionle	aking
brokenha	ve air bubbles
10. Were any anomalies identified in sample re-	ceipt? Yes [] No []
11. Description of anomalies (include sample n	umbers):
Sample Custodian/Laboratory: Emiry Mart	Date: 5. 12.06 09:20
Telephoned to:On	By

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	Connecticut Yankee Statement of Work for Analytical Lab Services	CY-ISC-SOW-00
	Figure 1. Sample Chec	k-in List
	Date/Time Received: 5/12/04 @ 0920	*
	SDG#:	<u>`8</u>
	Work Order Number: 162832 . 7919 3995 8992	
	Shipping Container ID: Chain o	f Custody #_ <u>2006 - 00337</u>
,	1. Custody Seals on shipping container intact?	Yes [] No [C]
	2. Custody Seals dated and signed?	Yes [] No 10
	3. Chain-of-Custody record present?	Yes \$4 No []
	4. Cooler temperature <u>11</u> °C	
	5. Vermiculite/packing materials is:	Wet [CDry []
	6. Number of samples in shipping container.	*
	7. Sample holding times exceeded?	Yes [] No Kd
	hazard labels 	÷ le labels
	9. Samples are:	
	in good condition	
	brokenhave air bubble	\$
	10. Were any anomalies identified in sample receipt?	Yes AA No. F 1
	 Were any anomalies identified in sample receipt? Description of anomalies (include sample numbers): 	Yes [V] No []
1	 Were any anomalies identified in sample receipt? Description of anomalies (include sample numbers):	Yes [[] No [] Joil was busting out
1	 Were any anomalies identified in sample receipt? Description of anomalies (include sample numbers):	Yes [[] No [] Joil was busting out
1 	10. Were any anomalies identified in sample receipt? 1. Description of anomalies (include sample numbers):	Yes [] No [] Joil was busting out
I Si Tr	10. Were any anomalies identified in sample receipt? 1. Description of anomalies (include sample numbers):	Yes [] No [] Joil Was busting out Date: <u>Slbfor</u> By

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SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

Fed Ex Tok #	(00#	# of containers
7920 9480 6688	2006-00332	(T) seven
Lelo []	2006-00331	(U) Six
6655	2106 - 00330	(6) Six
7919 3895 8881	20010 - 00336	(9) ninc
8892	20010-00337	(9) nine
(this cooler had a	<u> </u>	
busted sample		
COOLER & LOC is W/RSO		
Emily Martin)		
J		
	· · · · · · · · · · · · · · · · · · ·	·
· · · · · · · · · · · · · · · · · · ·		
	<u> </u>	
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#47ORIES'				PM use only					
Client: C/ Yanker				SDG/ARCOC/Work Order: 142832					
Date Received:				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Received By: Alachat	ر المارين المراجعين الم			dur for					
	T	.		-					
Sample Receipt Criteria	Yes	NA	°Z	Comments/Qualifiers (Required for Non-Conforming Items)					
1 Shipping containers received intac and sealed?	t X	Γ		Circle Applicable: scals broken damaged container leaking container other (describe)					
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?	<u>x</u>								
4 Sample containers intact and sealed?			X	Circle Applicable: seals broken damaged container leaking contained other (describe)					
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:					
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)			X						
8 Samples received within holding time?	X			ld'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:					
11 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 Keling istad					
14 Air Bill , Tracking #'s, & Additional Comments				7919 3895 8892					
Suspected Hazard Information	Non- Regulated	Regulated	High Level	RSO RAD Receipt # *If > x2 area background is observed on samples identified as "non- regulated/non-radioactive", contact the Radiation Safety group for further investigation.					
A Radiological Classification?		X	h	Maximum Counts Observed*: < Blagel					
B I'CD Acgulated?	X			Comments: Rkad = 40 cpm					
C Material? If yes, contact Waste Manager or ESH Manager.	x			Hazard Class Shipped: UN#: N/A					
PM (ge PMA) review of Hazard clas	sificati	on:		Initials 04 Date: 5/12/04					
Date: S//2/do									



	"ATORIES"				PM use only					
Clie	ent: JanKal,				SDG/ARCOC/Work Order: 162832.					
Dat	Received: 5/12/20				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Dar	aived By: CiDerrice citte	· .			Curth					
	CITATION	4	_		ļ — į					
	Sample Receipt Criteria	Yes	NA	2 Z	Comments/Qualifiers (Required for Non-Conforming Items)					
1	Shipping containers received inta- and scaled?		T		Circle Applicable: seals broken damaged container leaking container other (describe)					
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		/	ł	Circle Coolant # ice bags blue ice dry ice (none) other describe)					
3	Chain of custody documents included with shipment?	1			cous arowet					
4	Sample containers intact and sealed?			\checkmark	Eircle Applicable: seals broken damaged container leaking container (other (describe)) busted bag w/ RSOs (00100 7970 9480 100370					
5 S	Samples requiring chemical preservation at proper pH?		~	1	Sample ID's, containers affected and observed pH: 8892					
6	VOA vials free of headspace defined as < 6mm bubble)?		1	1	Sample ID's and containers affected:					
7 () V	Are Encore containers present? If yes, immediately deliver to /OA laboratory)			V						
8 S	amples received within holding ime?	~			Id's and tests affected:					
9 S	ample ID's on COC match ID's n bottles?	V			Sample ID's and containers affected:					
10 D &	Date & time on COC match date t time on bottles?	~			Sample ID's affected:					
	umber of containers received match number indicated on COC?	レ			Sample ID's affected:					
12 C	OC form is properly signed in linquished/received sections?			ノ	no cols are relinguished					
4 Ai Ac	ir Bill ,Tracking #'s, & dditional Comments	Fed	IEX	* #	see continuation sheet					
Su	spected Hazard Information	Nota- Regulated	Regulated	High Level	RSO RAD Receipt # "If > x2 area background is observed on samples identified as "non- regulated/non-radioactive", contact the Radiation Safety group for further nvestigation.					
Ra	diological Classification?		V	N	Maximum Counts Observed*: 100 40 CPM					
	B Regulated?	4		C	Comments:					
Shi Ma Ma	aterial? If yes, contact Waste anager or ESH Manager.	1		H U	lazard Class Shipped: IN#:					
PM	(or PMA) review of Hazard class	iticatio	n:		Initials Date: 5 12/06					
	Page 23 of 105									

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Health Physics Procedure

Page 24	Connecticut Y 362 Injun H	ankee At Hollow Road, E 860-267	omic Po ast Hampton,	wer C CT 06424	ompan	у			Cha	ain o	f C	ustoc	ly Form	No. 2006-00319
9	Project Name: Haddam Ne	eck Decom	nissioning					Anal	vses Re	questec	1	Ŀ	DUse Only and the Line	
105	Contact Name & Phone: Jack McCarthy 860-267-	& Phone: / 860-267-2556 Ext. 3024												
	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.				Container	FSSGAM	FSSALL	Sr-90						
	Sample Designation	Date	Time	Media Code	Sample Type Code	Size- &Type Code							Comment, Preservation	. Dan Sample ID.
2	9106-0005-010F	5/02/06	13:16	SE	С	BP	X		X			Tr	ansferred from COC 2006-00314	
5	9106-0005-011F	5/02/06	13:39	SE	С	BP	X		X			Tr	ansferred from COC 2006-00314	
\rightarrow	9106-0005-013F	5/02/06	14:35	SE	C	BP	X		X			Tr	ansferred from COC 2006-00314	
1	9106-0005-014F	5/02/06	15:04	SE	С	BP	X		X			Tr	ansferred from COC 2006-00314	
1	9106-0005-016F	5/02/06	13:59	SE	С	BP	X		X			Tr	ansferred from COC 2006-00314	
3	9106-0005-015F	5/03/06	08:03	SE	С	BP	X		X			Ti	ansferred from COC 2006-00316	
4	9106-0005-017F	5/03/06	08:13	SE	С	BP	X		X		T	Ťı	ansferred from COC 2006-00316	
;	9106-0005-018F	5/03/06	09:09	SE	С	BP	X		X	[Ti	ransferred from COC 2006-00316	
,	9106-0005-018FS	5/03/06	09:09	SE	С	BP	X		X			Ti	ransferred from COC 2006-00316	
									1		1-			
	NOTES: PO #: 002332 MSR #: 06-0675 SSWP# NA 🖾 LTP QA 🗌 Radwaste QA 🗌 Non QA Samples Shipped Via:										E Informa J Comminge Tomp: <u>III (</u> Deg. C Custory, Seated)			
	1) Relinquished By	2 5	Date/Tim 806 / Date/Tim	e 2) Rejeived By $pate/Time = 5/9/66 8930$ Other						Other	Custody Seal Intern Y D N D			
										1/a(c			Bill of Lading # 19212 9195 435	2

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			•
-	Connecticut Yankee C	Y-ISC-SOW	-001
•	Statement of work for the sector of the sect		
•	Figure 1. Sample Check-in List		
	Date/Time Received: 5/9/06 0930		
	SDG#:MSR#06-0675		
	Work Order Number: 1624851.		
. :	Work Cristian III, 7920 9195 4352, 4363 Chain of Custody # 200 6-6	0318	0319
•	Shipping Container ID.	[]	•
	1. Custody Seals on shipping container intact?		• •
	2. Custody Seals dated and signed?		2
	3. Chain-of-Custody record present? Yes [/ No	[]	· :
	4. Cooler temperature 18°C, 19°C		<u></u>
•	5 Vermiculite/packing materials is: Wet UDry	Ĺ/I	
	Number of reinnies in shipping container: 18		
	6. Number of samples in suppling container.		•
	7. Sample holding times exceeded?	<u> </u>	
	8. Samples have: 	· · · · ·	
	9. Samples are:		
•	in good conditionleaking (Some blags)		
. •	brokenhave air bubbles		
· · · .			
	10. Were any anomalies identified in sample receipt? Yes [] No [J.	
	11. Description of anomalies (include sample numbers):		
			· ·
	$\sim \sim $		· ·
•	Ro. No -Int	1 00	
	Sample Custodian/Laboratory:Date:5[9]	06 073	
	Telephoned to: OnBy		
: -			•
		• •	



	PATORIES'				PM use only					
C	lient: ATMC				SDG/ARCOC/Work Order: 162485					
Б	ate Received: 5/9/2/0				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
	reived By: KHC				Cliffor					
	prio	r		T	μ. · · · · · · · · · · · · · · · · · · ·					
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)					
ħ	Shipping containers received intac and sealed?	i -	T		Circle Applicable: seals broken damaged container leaking container other (describe)					
F	Samples requiring cold	1	T		Circle Coolant # ice bags blue ice dry ice none other describe)					
2	preservation within (4 +/- 2 C)?	[1						
L	Record preservation method.	┟								
3	Chain of custody documents									
┡	included with shipment?		-		Circle Applicable: seals broken, damaged container, leaking container, other (describe)					
4	sealed?	K			Citer repriseder: sens browch Gamages conduirer reaking conduirer Gase (Gesenite)					
5	Samples requiring chemical		$\overline{\mathbf{N}}$		Sample ID's, containers affected and observed pH:					
Ľ	preservation at proper pH?	<u> </u>	<u> </u>	4	One of the set on the set of the					
6	VOA vials free of headspace $(defined as < 6mm bubble)$?	ł			Sample 1D's allo containers arrected:					
	Are Encore containers present?	<u> </u>			Dura					
.7	(If yes, immediately deliver to				Should					
	VOA laboratory)	 			Id's and rosts affored:					
8	time?									
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?									
11	Number of containers received match number indicated on COC?				Sample ID's affected:					
	COC form is properly signed in									
12	relinquished/received sections?									
14	Air Bill ,Tracking #'s, & Additional Comments	Fea Ex	d . C	79:	20 9195 4352 → 19°C 4363 → 18°C					
	Suspected Hazard Information	Non- Regulated	Regulated	High Level	RSO RAD Receipt #					
A	Radiological Classification?		\leq		Maximum Counts Observed*: So C/m					
R	Shipped as DVT Hazardous				Comments:					
C	Material? If yes, contact Waste				Hazard Class Shipped:					
2	Manager or ESH Manager.				JN#:					
	PM (or PMA) review of Hazard class	sificati	on:		Initials ('AL Date: 519106					
	Page 20 of 105									

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Connecticut	Yankee At n Hollow Road, E 860-26	wer C , CT 0642	ompan 4	у	Chain of Custody Form								2006-00332		
Project Name: Haddam	Neck Decomr	nissioning					Anal	yses Re	quested	1	Lab	Use Only is in the			
Contact Name & Phone: Jack McCarthy 860-26	57-2556 Ext.	3024									Col				
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones						FSSGAM	FSSALL	Sr-90							
Priority: 🔀 30 D. 🗌 14	Priority: 🔀 30 D. 🗌 14 D. 🗍 7 D.			Sample	Container Size- &Type										
Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation		Lab Sample ID	
9106-0006-004F	4/28/06	12:46	SE	C	BP	X		X			Tran	sferred from COC 2006-00317			
9106-0006-005F	4/28/06	13:03	SE	C	BP	X		X	T		Tran	sferred from COC 2006-00317			
9106-0006-006F	4/28/06	13:22	SE	C	BP	X		X			Tran	sferred from COC 2006-00317			
9106-0006-007F	4/28/06	13:41	SE	C	BP	X		X			Tran	iferred from COC 2006-00317			
9106-0006-007FS	4/28/06	13:41	SE	C	BP	X		X			Tran	sferred from COC 2006-00317			
9106-0006-012F	5/01/06	13:40	SE	C	BP	X		X			Tran	sferred from COC 2006-00317			
9106-0006-017F	5/01/06	14:03	SE	C	BP	X		X			Tran	sferred from COC 2006-00317			
													1999-1994 1980-1994 1995-1995		
													1915		
												· · · · · ·			
NOTES: PO #: 002332	MSR #: 06-0	3687 SSW	P#NA		LTP QA	[] 1	Radwas	te QA	1	Jon QA		Samples Shipped Via: Fed Ex UPS Hand	Ter Ter	ernal Container np: <u>//2</u> Deg. C ustoly Sealed?	
1) Relinquished By	Date/Tim	2) Received By $Date/Time$ C O A A COVID $S D O O O O O O O O O O O O O O O O O O $						D Other	Cit	tody Seal Intact?					
3) Relinquished By	e	4) Recei	ved By				Date/	Time		Bill of Lading #		XVN I			

· · · ·	
	Connecticut Yankee CY-ISC-SOW-001 Statement of Work for Analytical Lab Services
	Figure 1. Sample Check-in List
•	Date/Time Received: 5/10/00 @ 0920
•	SDG#:
• • •	Work Order Number:162850 /.
	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 YDNo []
	4. Cooler temperature 1700
	5. Vermiculite/packing materials is: Wet RD Dry [1]
	6. Number of samples in shipping container: <u>Jll: Cont Stret</u>
••••••	7. Sample holding times exceeded? Yes [] No [
	Lape hazard labels
	9. Samples are:
· · ·	
•. •	brokenhave air bubbles
	10. Were any anomalies identified in sample receipt? Yes [] No
	11. Description of anomalies (include sample numbers):
2 .	N/H
•	
	Sample Custodian/Laboratory: CHOLINICON e Date: 5/12/06
	Telephoned to:OnBy



"PATORIES"				PM use only				
Client: VanKol,				SDG/ARCOC/Work Order: 162832, 162850				
Date Received: 51	lon			PM(A) Review (ensure non-conforming items are resolved prior to signing):				
Received By: CIDENI	icotte			ayap				
Sample Receipt Cr	iteria 🖇		No N	Comments/Qualifiers (Required for Non-Conforming Items)				
1 Shipping containers receipand sealed?	ved intact	オ	1	Circle Applicable: seals broken damaged container leaking container other (describe)				
Samples requiring cold 2 preservation within (4 + Record preservation mether	/- 2 C)? 10d.	/	1	Circle Coolant # ice bags blue ice dry ice (none) other describe)				
³ Chain of custody docume included with shipment?	nts 🗸			cous arowet				
4 Sample containers intact a sealed?	and		V	Circle Applicable: seals broken damaged container leaking container (other (describe)) bustell bag w RSOs (2001/17920 9480 100000 (M)				
5 Samples requiring chemic preservation at proper pH	al ?	<u> </u>	1	Sample ID's, containers affected and observed pH: 8892				
6 VOA vials free of headsp (defined as < 6mm bubb	ace le)?	~	1_	Sample 11/5 and containers affected:				
 Are Encore containers pro 7 (If yes, immediately deliv VOA laboratory) 	esent? er to		v	ł				
8 Samples received within h time?	olding			Id's and tests affected:				
9 Sample ID's on COC mate on bottles?	ch ID's レ			Sample ID's and containers affected:				
10 Date & time on COC mate & time on bottles?	ch date			Sample ID's affected:				
Number of containers rece match number indicated on	ived COC?			Sample ID's affected:				
COC form is properly sign relinquished/received secti	ned in ons?		\checkmark	no cols are relinguished				
Air Bill , Tracking #'s, & Additional Comments	Fe	dei	¢ #	see continuation sheet				
Suspected Hazard Inform	ation Non-training	Regulated	High Level	RSO RAD Receipt #				
Radiological Classification		V		Maximum Counts Observed*: 100 40 CPM				
Shipped as DOT Hazardous								
Material? If yes, contact W Manager or ESH Manager.	aste			Hazard Class Shipped: UN#:				
PM (or PMA) review of Haz	ard classificat	ion:_		Initials Carlo Date: Stralach				
Page 29 of 105								



SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

162 832, 162850 VANK # (00年 Fed EX TOKE containce Seven 2006-00332 7920 9480 6688 2006-00331 Six 66 0 2006-00330 101055 10 Six 2006 - 00336 7919 3895 8881 q nine 8892 nine 20010-00337 his coder had a busted sample COOLER & COG is W/RSO Emily Martin
Health Physics Procedure

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<u></u>	t icut Ya 162 Injun Ho	ankee At ollow Road, E 860-267	Comic Po East Hampton, 7-2556	wer C , CT 0642	ompan 4	y		163	Ch: 374	ain o	f Cı	usto	dy Form	No. 2006-00367
Project Name: Ha	ddam Neo	ck Decomn	nissioning					Anal	vses Re	auesteo	1		ab Use Only	
Contact Name & Jack McCarthy	Phone: 860-267-2	.556 Ext. 3	3024									C	omments:	
Analytical Lab (N General Engineer 2040 Savage Road 843 556 8171. At	ame, City, ng Labora . Charlest n. Cheryl	, State) atories ton SC. 294 Jones	407				SSGAM	SSALL	r-90	li-63				
Priority: 🔀 30 D.	14 D.	□7D.		Media	Sample	Container Size-	Ц	ί τ ι	S	Z				
Sample Designation	n	Date	Time	Code	Code	Code							Comment, Preservation	Lab Sample ID
9106-0008-001F		5/05/06	11:13	SE	C	BP	Х		X	X		Tr	ansferred from COC # 2006-00324	
9106-0008-003F		5/5/06	13:35	SE	С	BP	X		X	X		Tr	ansferred from COC # 2006-00325	
9106-0008-004F		5/5/06	13:51	SE	C	BP	X		X	X		Tr	ansferred from COC # 2006-00325	
9106-0008-005F		5/5/06	14:17	SE	С	BP	X		X	X		Tr	ansferred from COC # 2006-00325	
9106-0008-006F		5/5/06	14:36	SE	C	BP	X		Х	X		Tr	ansferred from COC # 2006-00325	
9106-0008-006FS		5/5/06	14:36	<u>SE</u>	С	BP	X		X	X		Tr	ansferred from COC # 2006-00325	
9106-0008-007F		5/5/06	15:03	SE	C	BP		X				Tr	ansferred from COC # 2006-00325	
9106-0008-002F		5/5/06	13:10	SE	C	BP	<u>X</u>		X	X		Tr	ansferred from COC # 2006-00325	
NOTES: PO #: 00	2332 M	SR #: 06-(Date/Time	vp# NA 250	2) Recei 4) Recei	LTP QA	0 8	Radwa	ste QA	to for the second secon	Non Time Time	QA 930	Samples Shipped Via: Fed Ex UPS Hand Other Bill of Lading #	Internal Container Temp.: Deg. C Custody Sealed? Y

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Page 32	Connecticut Y 362 Injun F	ankee At Hollow Road, E 860-267	omic Po ast Hampton,	wer C CT 06424	ompan	у		<u>1</u>	Cha	ain o	f Cu	stody	Form 163741	No. 2006-00366
of	Project Name: Haddam No	eck Decom	nissioning					Anal	yses Re	quested		Lab	Use Only	
105	Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext.	3024									Con	nments:	
	Analytical Lab (Name, Cit General Engineering Labo 2040 Savage Road. Charle 843 556 8171. Attn. Cher	ty, State) ratories ston SC. 294 yl Jones	407				FSSGAM	FSSALL	Sr-90	Ni-63				
	Priority: 🛛 30 D. 🗌 14 D). 🗌 7 D.			Sample	Container Size-								
	Sample Designation	Date	Time	Code	Code	Code	ĺ	[[Comment, Preservation	Lab Sample ID
109	9106-0008-008F	5/08/06	08:01	SE	C	BP	X		X	X		Trans	sferred from COC # 2006-00327	
10	9106-0008-009F	5/08/06	08:32	SE	C	BP	X		X	X		Trans	sferred from COC # 2006-00327	
01	9106-0008-010F	5/08/06	09:09	SE	C	BP	X	1	X	X		Trans	sferred from COC # 2006-00327	
12	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		Trans	sferred from COC # 2006-00327	
10	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	Ċ	BP	X		X	X		Trans	sferred from COC # 2006-00327	
25	9106-0008-014F	5/08/06	10:47	SE	C	BP	X	1	X	X		Tran	sferred from COC # 2006-00327	
DI-		+		†				1						
		<u> </u>							1	1				
	NOTES: PO #: 002332 1	MSR #: 06-	0743 ssv	WP#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 IN 27
	1) Relinquished By		Date/Tim	e	2) Recei	ived By	ito		5/2	Date/	Time	30] 🗋 Other	Custody Seal Intact?
	3) Relinquished By		Date/Tim	ie	4) Recei	ived By	·			Date/	Time		Bill of Lading #	Y SP N D

163741% **Connecticut Yankee** Statement of Work for Analytical Lab Services CY-ISC-SOW-001 Figure 1. Sample Check-in List 930 51211010 Date/Time Received: SDG#: Work Order Number: 19275154 1162 Chain of Custody #_2006-0036 Shipping Container ID: Custody Seals on shipping container intact? Yes [] No [] Custody Seals dated and signed? Yes [] No [-2. 3. Chain-of-Custody record present? Yes [-] No [] 19 تك 4. Cooler temperature Wet [] Dry [] NA 5. Vermiculite/packing materials is: 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 Were any anomalies identified in sample receipt? 10. Yes [] No [-] Description of anomalies (include sample numbers): 11. Sample Custodian/Laboratory: C Telephoned to: On

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SAMPLE RECEIPT & REVIEW FORM

"PATORIES"				PM use only					
Client: Como Vanker				SDG/ARCOC/Work Order: 1637411,					
Date Received: 624006				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Beneived By: (K,))		_							
Accented by:		- T	T						
Sample Receipt Criteria	Yes	NA	°N N	Comments/Qualifiers (Required for Non-Conforming Items)					
1 Shipping containers received int and sealed?	act /	·	Τ	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 foone') other descri					
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:					
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)			/						
8 Samples received within holding time?	/			id's and lesis affected:					
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:					
10 Date & time on COC match date & time on bottles?	\mathbb{Z}			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?	7								
Air Bill , Tracking #'s, & Additional Comments		$\int c$] 2	1 5154 1162					
Suspected Hazard Information	Non- Regulated	Regulated	High Level	RSO RAD Receipt # "If > x2 area background is observed on samples identified as "non- regulated/non-radioactive", contact the Radiation Safety group for further nvestigation.					
PCB Regulated?	1-74	<u>~</u>		Maximum Counts Observed*: Opm 20 Per R50					
Shipped as DOT Hazardous	┢╌┤			omments:					
Material? If yes, contact Waste Manager or ESH Manager.	1		H L	lazard Class Shipped: IN#:					
PM (or PMA) review of Hazard class	sificatio	n:	Û	L Initials 5/26/06 Date:					

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Page 34 of 105.



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SAMPLE RECEIPT & REVIEW FORM

PATORIES'				PM use only					
Client: Yankee				SDG/ARCOC/Work Order: 163741'1.					
Date Received: 5/24/00				PM(A) Review (ensure non-conforming items are resolved prior to signing):					
Received By: C. Quit o	to			an a					
		T	T						
Sample Receipt Criteria	Yes	NA	ź	Comments/Qualifiers (Required for Non-Conforming Items)					
1 Shipping containers received int and sealed?	act 🗸	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 # ice bags blue ice dry ice fone other describe)					
3 Chain of custody documents included with shipment?	~								
4 Sample containers intact and sealed?	\checkmark			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)?		V		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?	~			Sample ID's and containers affected:					
10 Date & time on COC match date & time on bottles?	~		9	Sample ID's affected:					
11 Number of containers received match number indicated on COC?	V		S	Sample ID's affected:					
12 COC form is properly signed in relinguished/received sections?	eg/		イ	not relinguistic					
Air Bill, Tracking #'s, & Additional Comments	7q 2	7	51	64 1173 64 1173					
Suspected Hazard Information	Non-Regulated	Kegulated	High Level	SO RAD Receipt # If > x2 area background is observed on samples identified as "non- egulated/non-radioactive", contact the Radiation Safety group for further avestigation.					
A Radiological Classification?		4	M	faximum Counts Observed*: 40 CPM					
Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.			н U	azard Class Shipped: N#:					
PM (or PMA) review of Hazard class	sification):	<u>er</u>	Initials <u>5/26/06</u> Date:					
•				/ /					

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Figure 1. Sample Check-in List Date/Time Received: <u>5/2ucl No @ 093D</u> SDG#:	Figure 1. Sample Check-in List terTime Received: <u>5/226/06@093D</u> G#: proprint Container ID: <u>5/226/06@093D</u> GH: proprint Container ID: <u>5/226/06@093D</u> Custody Seals on shipping container intact? Yes [/ No [] Custody Seals on shipping container intact? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody record present? Yes [/ No [] Number of samples in shipping container: <u>(S) 'Kight</u> Samples have: <u>100 [] Tape</u>	tatement of Work for Anal	ytical Lab Services			CY-ISC-SOW-001
Date/Time Received: 5/24cl DG @ 093D SDG#: Work Order Number: Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - 053 400 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - Shipping Container ID: T9215/54 11T3 Chain of Custody # 2000 - Shipping Custody seals hazard labels No [J] Samples have:	te/Time Received: 5/24cl DG @ 093D G#: prk Order Number: piping Cohtainer ID: 19215/54 1173 Chain of Custody # 2000 - 003 Lece Custody Seals on shipping container intact? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Custody Seals dated and signed? Yes [/ No [] Cooler temperature		Figure 1. Sam	ple Check-in List		
SDG#: Work Order Number: Shipping Container ID: 1. Custody Seals on shipping container intact? Yes 1. Custody Seals dated and signed? Yes Yes 2. Custody Seals dated and signed? Yes Yes 3. Chain-of-Custody record present? Yes Yes 4. Cooler temperature 21** 5. Vermiculite/packing materials is: Wet Yes 7. Sample holding times exceeded? Yes Yes Number of samples in shipping container: (1) Kample holding times exceeded? Yes Yes Number of samples in shipping container: (1) Sample holding times exceeded? Yes Yes No 8. Samples have:	G#:	ate/Time Received:	5/24/06 Q	0930		
Work Order Number: Shipping Container ID: T9215 K4 11T3 Chain of Custody # <u>2000 - 053 lace</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	brk Order Number: ipping Cohtainer ID: T9215/54 1173 Chain of Custody # Custody Seals on shipping container intact? Yes [J] No [] Custody Seals dated and signed? Yes [J] No [] Chain-of-Custody record present? Yes [J] No [] Cooler temperature 21** Vermiculite/packing materials is: Wet [J] Dry [h] Number of samples in shipping container: [] Tape	DG#:			· · .	
Shipping Container ID: <u>T9215/54 1173</u> Chain of Custody # <u>2000 - 053/64</u> 1. Custody Seals on shipping container intact? Yes [I No [] 2. Custody Seals dated and signed? Yes [I No [] 3. Chain-of-Custody record present? Yes [I No [] 4. Cooler temperature	ipping Container ID: 79215/54 1173 Chain of Custody # 2000 - 003 (e.c. Custody Seals on shipping container intact? Yes [1] No [] Custody Seals dated and signed? Yes [] No [] Chain-of-Custody record present? Yes [] No [] Cooler temperature	Vork Order Number:		•		
1. Custody Seals on shipping container intact? Yes [I] No [] 2. Custody Seals dated and signed? Yes [J] No [] 3. Chain-of-Custody record present? Yes [J] No [] 4. Cooler temperature	Custody Seals on shipping container intact? Yes [] No [] Custody Seals dated and signed? Yes [] No [] Custody Seals dated and signed? Yes [] No [] Custody record present? Yes [] No [] Cooler temperature Q!** Vermiculite/packing materials is: Wet [] Dry [] Number of samples in shipping container: [] 'cight Sample holding times exceeded? Yes [] No [] 3. Samples have:	hipping Container ID: 19	12151541173	Chain of Custoo	ly #20014	0-0036ce
2. Custody Seals dated and signed? Yes [JNo [] 3. Chain-of-Custody record present? Yes [JNo [] 4. Cooler temperature	Custody Seals dated and signed? Yes [J No [] Chain-of-Custody record present? Yes [J No [] Cooler temperature 2/** Vermiculite/packing materials is: Wet [J Dry []] Number of samples in shipping container: (¶) 'kight Sample holding times exceeded? Yes [] No [J' 3. Samples have:	Custody Seals on sh	ipping container intact?	· · ·	Yes N	• • []
 3. Chain-of-Custody record present? Yes [] No [] 4. Cooler temperature	Chain-of-Custody record present? Yes [] No [] Cooler temperature	. Custody Seals dated	and signed?		Yes UN	o []
 4. Cooler temperature <u>21**</u> 5. Vermiculite/packing materials is: Wet [/] Dry [1] 6. Number of samples in shipping container: <u>(S) 'kiqht</u> 7. Sample holding times exceeded? Yes [] No [/] 8. Samples have: <u>1 tape hazard labels</u> custody seals <u>appropriate sample labels</u> 9. Samples are: <u>1 in good condition leaking</u> <u>broken have air bubbles</u> 10. Were any anomalies identified in sample receipt? Yes [] No [/] 11. Description of anomalies (include sample numbers): <u>//</u> 3. Sample Custodian/Laboratory: <u>C:Dur Ch</u> Date: 5/2/2/080 	Cooler temperature 2/** Vermiculite/packing materials is: Wet [/] Dry [1] Number of samples in shipping container: (\$) 'scight Sample holding times exceeded? Yes [] No [] 3. Samples have:	Chaia-of-Custody re	cord present?	. ·	Yes UN	o []
 5. Vermiculite/packing materials is: Wet [1] 6. Number of samples in shipping container:(9] 'scight	Vermiculite/packing materials is: Wet [J] Dry [1] Number of samples in shipping container: (R) 'xiqht Sample holding times exceeded? Yes [] No [J] 8. Samples have:	. Cooler temperature	21.0		<u> </u>	•
 6. Number of samples in shipping container:(?) 'xight	Number of samples in shipping container: (१) 'xiqht Sample holding times exceeded? Yes.[] No [J] 8. Samples have:	. Vermiculite/packing	materials is:	· .	Wet JD	ry [\]
7. Sample holding times exceeded? Yes. [] No [] 8. Samples have:	Sample holding times exceeded? Yes. [] No [] 8. Samples have:	Number of samples	in shipping container: _	(8) iciq	ht	
8. Samples have:	8. Samples have:	. Sample holding time	es exceeded?		Yes [] N	0 [J
		8. Samples have:				
Initial labels		tane	hazar	labolo		
9. Samples are:	Samples are: in good conditionleaking in good conditionleaking brokenhave air bubbles Were any anomalies identified in sample receipt? Yes [] No [J] Description of anomalies (include sample numbers):	custody seals		n laucis	*	
 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):/ 	P. Samples are: in good conditionleakingbrokenhave air bubbles Were any anomalies identified in sample receipt? Yes [] No [J] Description of anomalies (include sample numbers):	Custody 504/5				
in good condition leaking broken have air bubbles 10. Were any anomalies identified in sample receipt? Yes [] No [J] 11. Description of anomalies (include sample numbers):	in good conditionleaking brokenhave air bubbles Were any anomalies identified in sample receipt? Yes [] No [J Description of anomalies (include sample numbers):/ ple Custodian/Laboratory:ComicAbDate:JRuboo	9. Samples are:	• • • • •			
brokenhave air bubbles 10. Were any anomalies identified in sample receipt? Yes [] No [] 11. Description of anomalies (include sample numbers):	brokenhave air bubbles Were any anomalies identified in sample receipt? Yes [] No [J Description of anomalies (include sample numbers):/ ple Custodian/Laboratory:Cource phoned to:On	in good cond	itionlea	king		
10. Were any anomalies identified in sample receipt? Yes [] No [] 11. Description of anomalies (include sample numbers):	Were any anomalies identified in sample receipt? Yes [] No [J Description of anomalies (include sample numbers):	broken	hav	e air bubbles	· · ·	
10. Were any anomalies identified in sample receipt? Yes [] No [.] 11. Description of anomalies (include sample numbers): Sample Custodian/Laboratory: CoOut cto Date: 5/2/2/000	Were any anomalies identified in sample receipt? Yes [] No [] Description of anomalies (include sample numbers):					
Ample Custodian/Laboratory: <u>CoOur</u>	Description of anomalies (include sample numbers):). Were any anomalies	identified in sample reco	eipt?	Yes [] No	4
Sample Custodian/Laboratory: Constants Date: 5/2/2/020	pple Custodian/Laboratory: <u>C. Qui As</u> phoned to: On Ry	. Description of anom	alies (include sample nu	mbers):	Np	
Sample Custodian/Laboratory: C. Dur'eto Date: 5/2/2/000	pple Custodian/Laboratory: <u>C. Dur'Ab</u> phoned to: <u>On</u> Ry			·	/	
Sample Custodian/Laboratory: C. Dui cto Date: 5/2.6/000	pple Custodian/Laboratory: <u>C. Dur'As</u> phoned to: <u>On</u> Ry			· <u>·</u> ··································		
	ephoned to: On By	imple Custodian/Laborator	C. Quicto		_ Date: _ 5/2	24/00

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Health Physics Procedure

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ige 3	Connecticut	Yankee A	tomic Po	wer C	Compar	ıy			Cn	ain	01 C	usto	uy form	No. 2006-00380
7 of	Jos nju	860-26	7-2556								_			· ·
10	Project Name: Haddam 1	Neck Decom	missioning]]		Anal	yses Re	quest	ed	្រា	ab Use Only	
S	Contact Name & Phone: Jack McCarthy 860-26	7-2556 Ext.	3024									C	omments:	·
	Analytical Lab (Name, C General Engineering Lab 2040 Savage Road. Charl 843 556 8171. Attn. Che	ity, State) oratories leston SC. 29 ryl Jones	407				SSGAM	SSALL	Ni-63					
	Priority: 🛛 30 D. 🗌 14	D. 🗌 7 D.	······	Media	Sample	Container Size-	Ц Ц Ц	<u>H</u> _î						
	Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation	Lab Sample ID
21	9106-0009-016F	5/15/06	13:28	SE	С	BP	X	1	X			Tr	ansferred from COC 2006-00352	
₅₀ 2	9106-0009-016FS	5/15/06	13:28	SE	С	BP	X		X			Tra	ansferred from COC 2006-00352	
503	9106-0009-017F	5/15/06	14:03	SE	С	BP	X	<u> </u>	X			Tr	ansferred from COC 2006-00352	
116	9106-0009-011F	5/15/06	08:05	SE	С	BP		x	[Tr	ansferred from COC 2006-00351	
04	9106-0009-013F	5/15/06	08:35	SE	С	BP	X	f	X			Tra	ansferred from COC 2006-00351	
005	9106-0009-013FS	5/15/06	08:35	SE	С	BP	X		x			Tr	ansferred from COC 2006-00351	
017	9106-0009-014F	5/15/06	08:59	SE	С	BP		X			•{	Tra	ansferred from COC 2006-00351	
<i>role</i>	9106-0009-015F	5/15/06	09:36	SE	С	BP	X		X		+	Tra	ansferred from COC 2006-00351	
													·····	
										· · · · · · · · · · · · · · · · · · ·				-
	NOTES: PO #: 002332	MSR #: 06- /	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 N
	1) Relinquished By		Date/Time	•	2) Recei	Ad By	2			Date	/Time			Custody Seal Intact
	JAME KICARTS	6	7.06/1110	00	_11	Val	in		6-	8-0	26	900	Other	
	3) Relinquished By		Date/Time		4) Receiv	ved By)			Date	/Time		Bill of Lading #	Ү П МП
				d				·			···-···		7921.1915 2869	· I

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

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Health Physics Procedure

Page 38 (Connecticut Y 362 Injun	Yankee At Hollow Road, E 860-267	omic Po ast Hampton	wer C , CT 06424	ompan 4	у			Cha	ain o	f Cus	stody	Form	No. 2006-00381
of 1	Project Name: Haddam N	Neck Decomm	nissioning					Anal	yses Re	questeo	<u>1</u>	Lab	Use Only	
05	Contact Name & Phone: Jack McCarthy 860-267	7-2556 Ext. 3	3024							•		Con	iments:	
	Analytical Lab (Name, C General Engineering Lab 2040 Savage Road. Charl 843 556 8171. Attn. Che	ity, State) oratories eston SC. 294 ryl Jones	107				SSGAM	FSSALL	Ni-63					
	Priority: 🛛 30 D. 🗌 14 1	D. 🗌 7 D.		Madia	Sample	Container Size-								
	Sample Designation	Date	Time	Code	Code	Code							Comment, Preservation	Lab Sample ID
100	9106-0009-001F	5/11/06	13:22	SE	С	BP	X		X			Trans	ferred from COC 2006-00347	
108	9106-0009-002F	5/11/06	13:46	SE	C	BP	X		X			Trans	ferred from COC 2006-00347	
ď	9106-0009-003F	5/11/06	14:06	SE	C	BP	X	1	X			Trans	iferred from COC 2006-00347	
do	9106-0009-004F	5/11/06	14:30	SE	С	BP	X		X			Trans	iferred from COC 2006-00347	
oll	9106-0009-005F	5/11/06	14:55	SE	C	BP	X	1	X			Trans	iferred from COC 2006-00347	
olv	9106-0009-007F	5/12/06	07:44	ŠE	C	BP	X		X			Tran	sferred from COC 2006-00348	
03	9106-0009-008F	5/12/06	08:16	SE	С	BP	X	1	X			Tran	sferred from COC 2006-00348	
stil	9106-0009-009F	5/12/06	08:35	SE	С	BP	X		X			Tran	sferred from COC 2006-00348	
016	9106-0009-010F	5/12/06	09:07	SE	C	BP	X		X			Tran	sferred from COC 2006-00348	
	NOTES: PO #: 002332	MSR #: 06-	SSI	l WP# NA		LTP QA		Radwa	 aste QA		Non Q	 A	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: Deg. C Custody Sealed? Y 🗆 N 🗆
	1) Relinquished By		Date/Tim	le	2) Rece	ined By			-	Date	/Time	L.	Other	Custody Seal Intact?
	JAME KILARTE	6-	7- 06/11:	00	\mathcal{H}	1 h	1		6	8/06	- 90) 		
	3) Relinquished By		Date/Tim	ie	4) Rece	ived By	/ _		,	Date	/Time		Bill of Lading #	YONO
													7921 1915 2858	

164542/.

		Chery	164551%	CPA	n 40
Conr State	necticut Yankee ment of Work for A	nalytical Lab Services	•	СҮ	-ISC-SOW-0
Date/	Time Received:	Figure 1. 5 6 - 8 - 0 (Sample Check-in Li	st	· ·
SDG	¥:	MSR#06-0	819,0818		
Work Shipr	Order Number:	921-1915-2858	_ Chain of Custo	200 \$ -00 3 2006 - 00 3 dy #_2006 - 00 3	\$2 80 81
I.	Custody Seals on	shipping container inta	act?	Yes [X] No []	
2.	Custody Seals da	ted and signed?	· · · · · · · · · · · · · · · · · · ·	Yes [] No 🕅	
3.	Chain-of-Custody	y record present?		Yes [No []	• •
4.	Cooler temperatu	re			
5.	Vermiculite/pack	ing materials is:	· · · ·	Wet [] Dry 📐	
6. 7.	Number of sampl	es in shipping containe: mes exceeded?	r:	Yes [X] No []	· · · ·
8. 5	Samples have: tape custody sea	haz Isapj	zard labels propriate sample lab	* els	
9. 5	Samples are: in good con broken	udition	leaking have air bubbles		
10. 11.	Were any anomalie Description of anon	es identified in sample r	eceipt?	Yes [] No [X]	
		,			
• •				•	
		AM.O		Datas 1 A	
Sample	Custodian/Laborato	y the part	4	Date 0 0 0	0

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Page 4	Connecticut Y 362 Injun F	ankee At Iollow Road, E 860-267	comic Po Gast Hampton, 7-2556	wer C , ct 06424	ompan 4	y			Cha	ain c	of Cu	stody	y Form	No. 2006-00349
ď	Project Name: Haddam No	eck Decomn	nissioning					Anal	ses Re	queste	d	Lab	Use Only	
3	Contact Name & Phone: Jack McCarthy 860-267-	2556 Ext.	3024							•		Con	nments:	
	Analytical Lab (Name, Cit General Engineering Labo 2040 Savage Road. Charle 843 556 8171. Attn. Cher	y, State) ratories ston SC. 294 yl Jones	407				FSSGAM	FSSALL	Ni-63					
	Priority: 🛛 30 D. 🗌 14 D	D. 🗌 7 D.	r	Media	Sample Type	Container Size- &Type							163105%	- T
	Sample Designation	Date	Time	Code	Code	Code				-			Comment, Preservation	Lab Sample ID
1	9106-0010-001F	5/04/06	10:49	SE	C	BP	X		X			Tran	sferred from COC 2006-00321	
0	9106-0010-002F	5/04/06	11:12	SE	С	BP	X		X			Tran	sferred from COC 2006-00321	
l	9106-0010-004F	5/04/06	12:48	SE	C	BP	X		X			Tran	sferred from COC 2006-00321	
L	9106-0010-006F	5/04/06	13:34	SE	C	BP	X		X	_		Tran	sferred from COC 2006-00321	
3	9106-0010-007F	5/04/06	13:21	SE	C	BP	X		X			Tran	sferred from COC 2006-00321	
ť	9106-0010-009F	5/04/06	14:01	SE	C	BP	X		X			Tran	sferred from COC 2006-00321	
Ê	9106-0010-010F	5/04/06	14:21	SE	C	BP	X		X			Tran	sferred from COC 2006-00321	
le	9106-0010-012F	5/04/06	14:44	SE	C	BP	X		X			Tran	sferred from COC 2006-00321	
8	9106-0010-013F	5/04/06	15:06	SE	C	BP		X				Tran	sferred from COC 2006-00321	-
	NOTES: PO #: 002332 1	JMSR #: 06-	0707 SSV	WP#NA	. 🛛	LTP QA		Radwa	iste QA		Non (QA	Samples Shipped Via: Fed Ex UPS Hand	Internal Container Temp.: ZDeg. C Custody Sealed? Y N D
	1) Relinquished By JAMME' RUANTE	5-1	Date/Tim 6-06	ne 1150	2) Recei	ved By			3	Date	Time	945	Other	Custody Seal Intact?
	3) Relinquished By		Date/Tim	ne	4) Rece	ved By				Date	/Time		Bill of Lading #	Y 👽 N 🗆

, 14 3 L. L.

Connecticut Yankee		· · · ·		•
Statement of Work for Analytical Lab S	ervices		CY-ISC-SOW-001	- · ·
Fig	gure 1. Sample Check-	in List		
Date/Time Received: 9 ⁴⁵ 5	5/17/06			
SDG# 7	X 04 04-070-	,		• ·
Work Order Number: 16310	5%			
Shipping Container ID: 704 3113	85 71 Chain of	Custody #	50349	
1. Custody Seals on shipping conta	ainer intact?	Yes 🕅 No	[]	
2. Custody Seals dated and signed?	?	Yes [¥] No	11	
3. Chain-of-Custody record present	t?	Yes 🔀 No	[]	
4. Cooler temperature <u>17°</u> C	C .	•	\	
5. Vermiculite/packing materials is	:	Wet 🕅 Dry	13	-
6. Number of samples in shipping c	container: 9	1		
7. Sample holding times exceeded?		Yes [] No	1 2	•
8. Samples have:	 .			
tape	bazard labels	· ·		
× custody seals		* • l=L-1-		
9. Samples are:	· · · ·			
in good condition	Leaking			•
broken	have air bubble	S		
10. Were any anomalies identified in s	sample receipt?	Yes [] No 🎗	1	
11. Description of anomalies (include	sample numbers):			•
		· · · · · · · · · · · · · · · · · · ·		
Sample Custodian/Laboratory:	ly	Date: 5-17	-06	
felephoned to:		By		

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SAMPLE RECEIPT & REVIEW FORM

CHERYL

Client: Catkl. YAJLEE SDG/ARCOC/Work Order: Date Received: 5-17-05 PM(A) Review (mayor surface for homing items are resolved prior to signing): Received By: ALM FM(A) Review (mayor surface for homing items are resolved prior to signing): Sample Receipt Criteria 3 2 2 Simpling containers received intact and sealed? Comments/Qualifiers (Required for Non-Conforming items) Samples requiring cold Circle Applicable: with brides dry ice Components included with shipment? Circle Applicable: selfs base ice dry ice Components Sample containers intact and sealed? Sample ID's containers affected and doerved pit. Sample to stack documents Sample containers intact and sealed? Sample ID's and containers affected: Sample ID's and containers affected: Glefined as < form bubble? Sample ID's and containers affected: Sample ID's affected: Sample ID's on COC match ID's information Sample ID's affected: Sample ID's affected: Suspected Hazard Information IS Sample ID's affected: Sample ID's affected: At the on poncles? Sample ID's affected: Sample ID's affected: Sample ID's affected: At the on poncles? Sample ID					Fire use only							
Date Received: 5-17-05 FM(A) Review (exponents/Qualifiers are resolved prior to signing): Received By: ALM Sample Receipt Criteria 3 2 2 Sample Receipt Criteria 3 2 2 Comments/Qualifiers (Required for Non-Conforming Items) Shipping containers received infact and scaled? Circle Cooline # keking container where @ manual for the signing): Samples requiring cold Circle Cooline # keking container where @ manual for the signing): Preservation within (4 +/- 2 C)? Circle Applicable: scale bracks: damaged container where @ manual for the signing): Sample containers intext and scaled? Sample requiring chemical preservation method. Circle Applicable: scale bracks: damaged container where @ for the signing): YoA iabs free of headspace Samples requiring chemical preservation babble)? Sample ID's and containers affected: Sample ID's and containers affected: YoA iabs free of theadspace Sample ID's and containers affected: Sample ID's and containers affected: Samples received within holding time? Sample ID's and containers affected: Sample ID's affected: Samples received within holding time? Sample ID's affected: Sample ID's affected: Sample ID's on COC match ID's on bottles?	Client: CONN. YANKEE				SDG/ARCOC/Work Order:							
Received By: ALM Sample Receipt Criteria \$ 2 Simple containers received intact and sealed? Comments/Qualifiers (Required for Non-Conforming Items) 1 Shipping containers received intact and sealed? Circle Applicable: seals brokes damaged consiner (dating cousiner oder (describe) 2 preservation within (4 +/- 2 C)? Circle Applicable: seals brokes damaged consiner testing consiner oder (describe) 2 preservation within (4 +/- 2 C)? Circle Applicable: seals brokes damaged consiner testing consiner oder (describe) 3 included with shipment? Circle Applicable: seals brokes damaged consiner testing consiner oder (describe) 4 Sample requiring chemical preservation at proper pH? Sample ID's consiners affected and observed pH: 6 VOA vials free of headspace (defined as < form bubble)?	Date Received: 5-17-	06			PM(A) Review (ensure non-topforming items are resolved prior to signing):							
Sample Receipt Criteria S Z Comments/Qualifiers (Required for Non-Conforming Items) 1 Shipping containers received intact Circle Applicable: setis braken damaged counter testing consiner oder (describe) 2 preservation within (4 +/- 2 C)? Circle Coolant # ise bags blue ise dry ise Comments/ 3 Chain of custody documents Circle Applicable: setis braken damaged countier oder (describe) 4 Sample containers intact and sealed? Circle Applicable: setis braken damaged countier oder (describe) 5 Sample requiring chemical preservation at proper pH7 Circle Applicable: setis braken damaged countier oder (describe) 6 VOA vials free of headspace (defined as < form bubble)?	Received By: A-LM				1 thinks							
Sample Receipt Criteria S Z Z Comments/Qualifiers (Required for Non-Conforming Items) 1 Shipping containers received intact Circle Applicable: seak braken damaged consiner leaking consiner oder (describe) 3 Samples requiring cold Circle Applicable: seak braken damaged consiner leaking consiner oder (describe) 2 Preservation within (4 +/- 2 C)? Circle Applicable: seak braken damaged consiner leaking consiner oder (describe) 2 Record preservation method. Circle Applicable: seak braken damaged consiner leaking consiner oder (describe) 3 Sample containers intact and sealed? Sample containers intact and preservation at proper pt? 4 Samples requiring chemical preservation at proper pt? Sample ID's containers affected and observed pt! VOA laboratory) Sample ID's on COC match ID's affected Sample ID's on COC match date to the safected 8 Sample ID's on COC match date to the safected Sample ID's affected: 9 on bottles? Sample ID's affected: 12 COC form is properly signed in relinguished/received sections? Sample ID's affected: 13 Runtber on bottles? Sample ID's affected: Sample ID's affected: 14 Air Bill , Tracking #'s, & Apperl 4 7/1/3 & 5 f4/1 Sample ID's affect												
Shipping containers received intact Image containers received intact Samples requiring cold Image containers received Samples requiring cold Image containers Circle Coolant # ket bags Band Saaled? Circle Coolant # Circle Coolant # ket bags Sample Containers intact and sealed? Sample ID's containers affected and observed pit: Samples requiring chemical get(defined as < frame babble)?	Sample Receipt Criteria	Yes	NA	0N	Comments/Qualifiers (Required for Non-Conforming Items)							
Samples requiring cold Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice Circle Coolant # ice bags blue ice dry ice <t< td=""><td>1 Shipping containers received intainand sealed?</td><td></td><td></td><td></td><td>Circle Applicable: seals broken damaged container leaking container other (describe)</td></t<>	1 Shipping containers received intainand sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)							
3 Chain of custody documents included with shipment? Image: Chain of custody documents scaled? 4 Sample containers intact and scaled? Circle Applicable: scals broken damaged container other (describe) 5 Samples requiring chemical preservation at proper pH? Sample ID's containers affected and observed pH: 5 Sample in the second phenomenance of the s	Samples requiring cold 2 preservation within (4 +/- 2 C)? Record preservation method.		1		Circle Coolant # ice bags blue ice dry ice bone other describe)							
4 Sample containers intact and sealed? Sample containers intact and sealed? 5 Samples requiring chemical preservation at proper pH? Sample ID's containers affected and observed pH: 6 VOA vials free of headspace Sample ID's and containers affected: 6 VOA vials free of headspace Sample ID's and containers affected: 7 (If yes, immediately deliver to VOA laboratory) Sample ID's and containers affected: 8 Samples received within holding time? Sample ID's and containers affected: 9 Sample ID's on COC match ID's on bottles? Sample ID's affected: 10 Date & time on COC match date & sample ID's affected: 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? YII > x2 area background is observed on samples identified as 'non-regulated/non-radioactive'', contact the Radiation Safety group for further investigation. 14 Air Bill, Tracking #'s, & Additional Comments YII > x2 area background is observed on samples identified as 'non-regulated/non-radioactive'', contact the Radiation Safety group for further investigation. 15 PCB Regulated? Maximum Counts Observed*: CAM 16 Alerard Information YII > x2 area background is observed on samples identified as 'non-regulated/non-radioactive'', contact the Radiation Safety group for further investigation.	3 Chain of custody documents included with shipment?	~										
Samples requiring chemical proper ph1? Sample ID's consumers affected and observed ph: 6 VOA vials free of headspace (defined as < form bubble)?	4 Sample containers intact and sealed?	1			Circle Applicable: seals broken damaged container leaking container other (describe)							
6 VOA vials free of headspace (defined as < 6mm bubble)?	5 Samples requiring chemical preservation at proper pH?	Ţ,	ノ		Sample ID's, containers affected and observed pH:							
Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory) 8 Sample received within holding time? 9 Sample ID's on COC match ID's on bottles? 10 Date & time on COC match date & Sample ID's affected: & 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? Sample ID's affected: 14 Air Bill , Tracking #'s, & Additional Comments 790 9 7/1/3 8574// Suspected Hazard Information Image: properly signed in relinquished? Image: properly signed in relinquished? Image: properly signed in relinquished? 14 Air Bill , Tracking #'s, & Additional Comments 790 9 7/1/3 8574// 15 Bregulated? Image: properly signed in regulated/non-radioactive", contact the Radiation Safety group for further incertified as "non-regulated? Image: properly signed in regulated? 14 Are Bailological Classification? Image: properly affected? Image: properly affected? 2 Bree Bagulated? Image: properly affected? Image: properly affected? 3 PCB Regulated?	6 VOA vials free of headspace (defined as < 6mm bubble)?		オ		Sample ID's and containers affected:							
8 Samples received within holding time? 9 Sample ID's on COC match ID's on bottles? 9 Sample ID's on COC match ID's on bottles? 10 Date & time on COC match date within holding time on bottles? 11 Date & time on COC match date within holding time on bottles? 11 Date & time on COC match date within holding time on bottles? 11 Number of containers received match number indicated on COC? 12 COC form is properly signed in relinquished/received sections? 12 COC form is properly signed in relinquished/received sections? 14 Air Bill , Tracking #'s, & Additional Comments 12 Suspected Hazard Information with the section of the	Are Encore containers present? 7 (If yes, immediately deliver to VOA laboratory)											
9 Sample ID's on COC match ID's on bottles? 10 Date & time on COC match date & fine on bottles? 11 Date & time on bottles? 11 Number of containers received match number indicated on COC? 12 COC form is properly signed in relinquished/received sections? 14 Air Bill , Tracking #'s, & Additional Comments 14 Additional Comments 15 Example ID's affected: 16 Sample ID's affected: 17 PCO form is properly signed in relinquished/received sections? 18 Air Bill , Tracking #'s, & Additional Comments 19 The Suspected Hazard Information 10 The Superior of Example ID's affected: 10 Suspected Hazard Information 10 The Superior of Example ID's affected: 11 PCB Regulated? 12 Fig. Reveloped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager. 11 PM (or PMA) review of Hazard classification: 11 Initials 12 Date: S/17/6*	8 Samples received within holding time?	~			Id's and tests 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: 11 Number of containers received match number indicated on COC? Sample ID's affected: 12 COC form is properly signed in relinquished/received sections? Image: Comparison of the text of	9 Sample ID's on COC match ID's on bottles?	1			Sample ID's and containers 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? 79.9 14 Air Bill ,Tracking #'s, & Additional Comments 79.9 14 Additional Comments 79.9 14 Suspected Hazard Information 1 15 1 2 16 1 2 17 1 2 18 Radiological Classification? 1 19 1 1 10 1 2 10 1 1 10 1 1 11 1 1 12 1 1 14 1 1 14 1 1 14 1 1 15 1 1 16 1 1 17 1 1 18 1 1 19 1 1 10 1 1 10 1 1	10 Date & time on COC match date & time on bottles?	\checkmark		1	Sample ID's affected:							
12 COC form is properly signed in relinquished/received sections? 14 Air Bill , Tracking #'s, & Additional Comments 79.9 7 3/13 854/ 14 Suspected Hazard Information 10 10 10 10 10 10 10 10 10 10 10 10 10 1	¹¹ Number of containers received match number indicated on COC?	\checkmark		2	Sample ID's affected:							
Air Bill , Tracking #'s, & 7914 3/13 854/ Additional Comments 7914 3/13 854/ Suspected Hazard Information 10 10 10 10 10 10 10 10 10 10 10 10 10 1	12 COC form is properly signed in relinquished/received sections?	\checkmark										
Suspected Hazard Information Image: Program Programe Programe Program Program Program Program Program Pr	14 Air Bill , Tracking #'s, & Additional Comments	79	•4	Ĵ	8113 8541							
A Radiological Classification? Maximum Counts Observed*: CMm 6 () B PCB Regulated? V Comments: Shipped as DOT Hazardous Hazard Class Shipped: UN#: Manager or ESH Manager. UN#: Date: 5/17/64	Suspected Hazard Information	Non- Regulated	Negulated		ASO RAD Receipt # If > x2 area background is observed on samples identified as "non- egulated/non-radioactive", contact the Radiation Safety group for further investigation.							
B PCB Regulated? V Comments: Shipped as DOT Hazardous Hazard Class Shipped: Material? If yes, contact Waste UN#: Manager or ESH Manager. UN#: PM (or PMA) review of Hazard classification: Initials Date: 5/17/64	A Radiological Classification?	ro -	\mathbf{T}	M	Aaximum Counts Observed*: CMM 60							
Shipped as DOT Hazardous Hazard Class Shipped: Material? If yes, contact Waste UN#: Manager or ESH Manager. UN#: PM (or PMA) review of Hazard classification: Initials	B PCB Regulated?	V		C	comments:							
Material? If yes, contact Waste Initials UN#: Manager or ESH Manager. UN#: PM (or PMA) review of Hazard classification: Initials Date:	Shipped as DOT Hazardous	T		.,	lazard Class Shippyd							
Manager or ESH Manager. Initials Date: 5/17/04	C Material? If yes, contact Waste				lazaru Class Shipped: N#:							
PM (or PMA) review of Hazard classification: Initials CD Date: 5/17/84	Manager or ESH Manager.			Ŭ								
	PM (or PMA) review of Hazard clas	sification	:		Initials Date: 5/17/0.0							

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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	SCI2
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	<u>S-52597</u>
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	N/A
Virginia	00151
Washington	C223

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

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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

S	Sample ID	Client ID
1	68404001	9106-0002-007F
1	68404002	9106-0002-011F
1	68404003	9106-0003-004F
1	68404004	9106-0003-015F
1	68404005	9106-0004-005F
1	68404006	9106-0004-015F
1	68404007	9106-0005-010F
1	68404008	9106-0005-014F
1	68404011	9106-0008-008F
1	68404012	9106-0009-002F
1	68404013	9106-0009-017F
1	68404014	9106-0010-001F
1	68404015	9106-0010-012F
1	201153129	Method Blank (MB)
1	201153130	168340011(9304-01-005C) Sample Duplicate (DUP)
1	201153131	168340011(9304-01-005C) Matrix Spike (MS)
1	201153132	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.

<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: 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

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
1201153133	Method Blank (MB)
1201153134	168340011(9304-01-005C) Sample Duplicate (DUP)
1201153135	168340011(9304-01-005C) Matrix Spike (MS)
1201153136	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.

<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: 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.

<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: 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

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)
168340012(9304-02-003C) Sample Duplicate (DUP)
168340012(9304-02-003C) 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-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.

<u>Quality Control (QC) Information:</u>

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

Prod	luct:

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:

81226 Reviewer/Date:



GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: 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.

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

<u>Certificate of Analysis</u>

Company : Address :	Connecticu 362 Iniun H	t Yankee A Iollow Rd	tomic Power								
Address .	502 mjun n										
	East Hampt	ton, Connec	cticut 06424				R	eport Date: Au	gust 21, 20	106	
Contact:	Mr. Jack M	cCarthy									
Project:	Soils PO# 0	02332									
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: Pate:		9106-0 168404 SE 18-MA 02-JUN Client 20.9%	002-007F 001 Y-06 V-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter ·	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	t Date 7	lime Batch	Mtd
Rad Alpha Spec Analysi	S										
Alphaspec Am241, Cm,	Solid ALL FS	55									
Americium-241	U	0.0762	+/-0.102	0.00	+/-0.102	0.0956	pCi/g	BXL1	08/11/06	1336 555696	51
Curium-242	U	0.00	+/-0.0995	0.00	+/-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–A	LL FSS										
Plutonium-238	U	0.199	+/-0.228	0.181	+/-0.229	0.444	pCi/g	BXL1	08/11/06	1633 555697	12
Plutonium-239/240	U	0.0341	+/-0.129	0.120	+/-0.129	0.323	pCi/g				
Liquid Scint Pu241, Sol	id-ALL FSS										
Plutonium-241	U	10.0	+/-6.64	5.08	+/-6.72	10.7	pCi/g	BXL1	08/16/06	1220 555698	33
Rad Liquid Scintillation	Analysis										
LSC, Tritium Dist, Solid	-HTD2,ALL	FSS									
Tritium	U	4.17	+/-6.67	5.28	+/-6.67	11.4	pCi/g	DFA1	08/09/06 1	1128 554582	2 4
Liquid Scint C14, Solid	All,FSS										
Carbon-14	U	0.0813	+/-0.0797	0.0634	+/-0.0797	0.132	pCi/g	ATH2	08/09/06 ()324 554583	\$ 5
Liquid Scint Fe55 Solid	-ALLESS										
Iron-55	U	9,90	+/48.1	32.0	+/-48.1	65.9	pCi/g	MXP1	08/12/06 1	633 555722	2 6
Liquid Scint Ni63 Solia							r 6				, U
Nickel-63	ILL ISS	7.02	+/-6 30	5 18	+/-6.40	10.6	nCi/a	MYPI	08/11/06 (1738 555773	. 7
Liquid Soirt T-00 C-11-		7.02	1 0.37	5.10	17 0.40	10.0	peng		00/11/00 (1150 555725	,
Tachnotium 00	-ALL FSS	0 1 2 0	+/ 0 212	0 177	+/-0.212	0 2/0	*C:/~	ECDI	00/11/07 4	007 554500	
rechnelium-99	U	0.139	+/-0.213	0.173	+/-0.213	0.360	pC1/g	EGDI	08/11/06/2	:027 554580	8
The following Pren Me	thods were p	erformed									
Method Descr	intion				Analyst	Date	Tim	Pren Batch			

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		·			
2	DODERNI HAGI 200 D. H. DONA 11C I					

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	Yankee A ollow Rd	tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	on, Connec Carthy)2332	ticut 06424				J	Report Date: August 21	, 2006
		Client Sam Sample ID	ple ID: :		9106-000 16840400	2–007F 1		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
5	EPA I	EERF C-01 M	lodified							
6	DOE	RESL Fe-1, N	1odified							
7	DOE	RESL Ni–1, M	1odified							

7 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:

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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
- 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
- $^{\wedge}$ 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	Yankee A ollow Rd	tomic Power									
Contact: Project:	East Hampt Mr. Jack Me Soils PO# 0	on, Connec cCarthy 02332	eticut 06424				F	Report Date: Au	igust 21,	2006		
	Client Sam Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ute: ate:		9106-0 168404 SE 19-MA 02-JUN Client 17.4%	002-011F 002 Y-06 V-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch [Mtd
Rad Alpha Spec Analys	sis											
Alphaspec Am241, Cm	, Solid ALL FS	S										
Americium-241	U	0.120	+/-0.154	0.0683	+/-0.155	0.251	pCi/g	BXL1	08/11/0	6 1336	555696	1
Curium-242 Curium-243/244	U	-0.0146	+/0.122	0.0692	+/-0.123 +/-0.0862	0.303	pCi/g					
Alphaspac Pu Solid-4	11 555	0.0105	0.0001	0.0407	17 0.0002	0.215	peng					
Plutonium-238	<i>LL</i> 155 U	0.0121	+/-0.125	0.127	+/-0.125	0.344	pCi/g	BXL1	08/11/0	6 1633	555697	2
Plutonium-239/240	Ŭ	0.0254	+/-0.0675	0.0381	+/-0.0675	0.167	pCi/g	21121	00/11/0	0 1000	000007	-
Liquid Scint Pu241, So	lid–ALL FSS											
Plutonium-241	U	6.72	+/-7.02	5.56	+/-7.05	11.7	pCi/g	BXL1	08/16/0	6 1237	555698	3
Rad Liquid Scintillation	n Analysis											
LSC, Tritium Dist, Soli	d-HTD2,ALL	FSS										
Tritium	U	-0.521	+/-7.03	5.94	+/-7.03	12.8	pCi/g	DFA1	08/09/0	6 1 1 4 3	554582	4
Liquid Scint C14, Solia	I All,FSS											
Carbon-14	U	0.023	+/-0.0828	0.0685	+/-0.0828	0.143	pCi/g	ATH2	08/09/0	6 0426	554583	5
Liquid Scint Fe55, Soli	d-ALL FSS	2.02		21.0		(- -	011	MANDI	00/10/0	<		
Iron-55	0	3.93	+/-4/./	31.9	+/-4/./	65.7	pC1/g	MXPI	08/12/00	5 1649	555722	6
Liquid Scint Ni63, Soli	d-ALL FSS	7.50	1 5 01	4 (9	1/ 5 01	0.00	-Cile	MVDI	00/11/0	(0025	666700	-
	U	7.52	+/-5.81	4.08	+/-5.81	9.60	pC1/g	MAPI	08/11/00	3 0825	555723	/
Liquid Scint Tc99, Soli Technotium-00	a-ALL FSS	0 173	+/-0 202	0.164	+/-0.202	0.341	nCi/a	EGDI	08/11/0	6 2042	551500	o
reenneuum 77	0	0.175	17 0.203	0.104	1 0.203	0.541	peng	LODI	00/11/00	5 2045	554560	0

The following Prep Methods were performed Method 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

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 :	Connecticu 362 Injun H	t Yankee A Iollow Rd	tomic Power						
	Contact:	East Hamp Mr. Jack M	ton, Connec cCarthy	ticut 06424				I	Report Date: August 2	21, 2006
	Project:	Soils PO# (002332							
		Client Sar Sample II	nple ID: D:		9106-00 1684040	002-011F 002		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Dat	e Time Batch Mtd
6	DOE	RESL Fe-1,	Modified							
7	DOE	RESL Ni-1,	Modified							
8	DOE	EML HASL-	-300, Tc-0	2-RC Modified						
Surrogate/	Tracer recov	ery Test	t			Recovery%	Ace	ceptable Limi	ts	
Americium-	-243	Alp	haspec Am	241, Cm, Solid	ALL	76		(15%-125%)		
Plutonium-2	242	Alp	haspec Pu,	Solid-ALL FSS		100		(15%-125%)		
Carrier/Tracer Recovery Liquid Scint Pu241, Solid-ALL FS			L FS	88		(25%-125%)				
Carrier/Tracer Recovery Liquid Scint Fe55, Solid-ALL FS			FS	72		(15%-125%)				
Carrier/Trac	er Recovery	Liqu	uid Scint Ni	63, Solid-ALL	FS	76		(25%-125%)		

79

(15%-125%)

Notes:

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 Tc99, Solid-ALL FS

- < 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
- 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.
- Ul 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
- h Preparation or preservation holding time was exceeded

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Certificate of Analysis

Company : Address :	Connecticut 362 Injun H	t Yankee A Iollow Rd	tomic Power									
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	on, Connec cCarthy 002332	ticut 06424				Report Date: August 21, 2006					
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): hte: vate:		9106-0 168404 SE 25-API 05-MA Client 23.5%	003-004F 003 R-06 Y-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	ſime	Batch N	٧Itd
Rad Alpha Spec Analysis												
Alphaspec Am241, Cm, S	Solid ALL FS	5S										
Americium–241	U	-0.027	+/-0.117	0.153	+/-0.117	0.488	pCi/g	BXL1	08/13/06	0819	555696	1
Curium-242 Curium-243/244	U	0.112	+/-0.315 +/-0.206	0.245	+/-0.315	0.781	pCi/g					
Alphasnec Pu Solid-AI		0.0217	17 0.200	0.205	17 0.200	0.574	peng					
Plutonium-238	L 1 55	0.061	+/-0.189	0.176	+/-0.189	0.449	pCi/g	BXL1	08/11/06	1633	555697	2
Plutonium-239/240	Ŭ	0.0551	+/-0.103	0.0584	+/-0.103	0.215	pCi/g					-
Liquid Scint Pu241, Soli	d-ALL FSS											
Plutonium-241	U	8.31	+/-5.73	4.40	+/-5.78	9.25	pCi/g	BXL1	08/16/06	1253	555698	3
Rad Gas Flow Proportion	nal Counting	g			1							
GFPC, Sr90, solid–ALL	FSS											
Strontium-90	U	-0.00343	+/-0.0203	0.0172	+/-0.0203	0.036	pCi/g	BXF1	08/14/06)834 :	556350	4
Rad Liquid Scintillation	Analysis	DOG										
LSC, Tritium Dist, Solid-	-HID2,ALL	FSS 0 603	±/ <u>-</u> 0.25	6 97	+/-8 25	14.9	nCi/a	DEAT	08/00/06	1150	551507	5
Liquid Spint C14 Splid		0.003	+/-0.25	0.07	+/-0.23	14.0	per/g	DFAI	08/09/00	1139.	554562	3
Carbon=14	ш,г зэ П	0.0937	+/0.0813	0.0642	+/-0.0813	0 134	nCi/a	АТН2	08/09/06 (0520 -	554583	6
Liquid Scint Fe55 Solid	- 411 FSS	0.0757	17 0.0015	0.0042	0.0015	0.154	peng	71112	00/07/00 (,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	JJ-JUJ	U
Iron-55	U	7.68	+/-51.2	34.2	+/-51.2	70.4	pCi/g	MXP1	08/12/06	1706 :	555722	7
Liauid Scint Ni63. Solid-	-ALL FSS						F - 8					
Nickel-63	U	5.74	+/-7.12	6.58	+/-7.13	13.6	pCi/g	MXP1	08/11/06 (.)912	555723	8
Liquid Scint Tc99, Solid-	-ALL FSS											
Technetium-99	U	-0.0643	+/0.198	0.169	+/-0.198	0.351	pCi/g	EGD1	08/11/06 2	2059 క	554580	9

The following Method	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	

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Certificate of Analysis

- Connecticut Yankee Atomic Power Company : Address : 362 Injun Hollow Rd East Hampton, Connecticut 06424 Report Date: August 21, 2006 Contact: Mr. Jack McCarthy Soils PO# 002332 Project: Project: Client ID: Client Sample ID: 9106-0003-004F **YANK01204** 168404003 YANK001 Sample ID: Vol. Recv.: Parameter Qualifier Result LC MDA Units **DF** Analyst Date Uncertainty TPU Time Batch Mtd DOE EML HASL-300, Pu-11-RC Modified EPA 905.0 Modified EPA 906.0 Modified EPA EERF C-01 Modified DOE RESL Fe-1, Modified DOE RESL Ni-1, Modified DOE EML HASL-300, Tc-02-RC Modified Surrogate/Tracer recovery Test Recovery% Acceptable Limits Americium-243 42 (15% - 125%)Alphaspec Am241, Cm, Solid ALL 92 Plutonium-242 Alphaspec Pu, Solid-ALL FSS (15%-125%)
- Carrier/Tracer Recovery Liquid Scint Pu241, Solid-ALL FS 113 (25% - 125%)Carrier/Tracer Recovery GFPC, Sr90, solid-ALL FSS 59 (25% - 125%)71 (15%-125%) Carrier/Tracer Recovery Liquid Scint Fe55, Solid-ALL FS 83 Carrier/Tracer Recovery Liquid Scint Ni63, Solid-ALL FS (25% - 125%)Carrier/Tracer Recovery Liquid Scint Tc99, Solid-ALL FS 76 (15% - 125%)

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
- H · 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
- 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
- QC Samples were not spiked with this compound Y
- \wedge 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

Parameter		Qualifier Result Uncertainty	LC TPU	MDA Units DF Analyst Date Time Batch Mtc
		Client Sample ID: Sample ID:	9106-0003-004F 168404003	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
	Contact: Project:	Mr. Jack McCarthy Soils PO# 002332		
		East Hampton, Connecticut 06424		Report Date: August 21, 2006
	Company : Address :	Connecticut Yankee Atomic Power 362 Injun Hollow Rd		

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Certificate of Analysis

Company : Address :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power									
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	on, Connec cCarthy 02332	cticut 06424				J	Report Date: August 21, 2006				
	Client Sample ID: Sample ID: Matrix: Collect Date: Receive Date: Collector: Moisture:			9106-0003-015F 168404004 SE 25-APR-06 05-MAY-06 Client 22.5%		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	1204 01				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch M	Mtd
Rad Alpha Spec Analysi	is											
Alphaspec Am241, Cm, 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	LL FSS						F 8					
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, Sol Plutonium–241 Rad Gas Flow Proportio	id-ALL FSS U onal Counting	6.63	+/-6.19	4.86	+/-6.22	10.2	pCi/g	BXL1	08/16/06	1309	555698	3
GFPC, Sr90, solid-ALI Strontium-90 Rad Liquid Scintillation	L FSS U Analysis	0.00477	+/-0.0216	0.0179	+/-0.0216	0.0375	pCi/g	BXFI	08/14/06	0834	556350	4
LSC, Tritium Dist, Solia Tritium	I-HTD2,ALL U	FSS 1.03	+/-7.06	5.85	+/-7.06	12.6	pCi/g	DFA1	08/09/06	1215	554582	5
Carbon-14	AII,F 55	0.156	+/-0.0912	0.0699	+/-0.0913	0.146	pCi/g	ATH2	08/09/06	0632	554583	6
Liquid Scint Fe55, Solia Iron–55	<i>t–ALL FSS</i> U	-9.99	+/-42.7	28.7	+/-42.7	59.2	pCi/g	MXP1	08/12/06	1722	555722	7
Liquid Scint Ni63, Solid Nickel-63	-ALL FSS U	0.939	+/-10.1	10.3	+/-10.1	21.6	pCi/g	MXP1	08/11/06	1001	555723	8
Liquid Scint Tc99, Solia Technetium–99	<i>I-ALL FSS</i> U	0.237	+/-0.213	0.170	+/-0.213	0.353	pCi/g	EGD1	08/11/06	2115	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 A	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 : Connecticut Yankee Atomic Power 362 Injun Hollow Rd Address : East Hampton, Connecticut 06424 Report Date: August 21, 2006 Contact: Mr. Jack McCarthy Soils PO# 002332 Project: Project: Client ID: Client Sample ID: 9106-0003-015F YANK01204 168404004 YANK001 Sample ID: Vol. Recv.: Parameter Qualifier Result Units Time Batch Mtd Uncertainty LC TPU MDA **DF** Analyst Date DOE EML HASL-300, Pu-11-RC Modified EPA 905.0 Modified EPA 906.0 Modified EPA EERF C-01 Modified DOE RESL Fe-1, Modified DOE RESL Ni-1, Modified DOE EML HASL-300, Tc-02-RC Modified Surrogate/Tracer recovery Acceptable Limits Test **Recovery%** 78 Americium-243 Alphaspec Am241, Cm, Solid ALL (15%-125%)

Plutonium–242	Alphaspec Pu, Solid–ALL FSS	94	(15%-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%)	
2	1			

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
- 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
- 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
- T 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
- 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
- Λ 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 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:	9106-0003-015F 168404004	Project: YANK01204 Client ID: YANK001 Vol. Recv.:
Parameter		Qualifier Result Uncertainty	LC TPU	MDA Units DF Analyst Date Time Batch Mtd

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Certificate of Analysis

Company : Address :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power									
Contact:	East Hampte Mr. Jack Mc	on, Connec Carthy	cticut 06424				Report Date: August 21, 2006					
Project.	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID: : te: ate:	ole ID: e: e:		9106-0004-005F 168404005 SE 03-MAY-06 12-MAY-06 Client 15.4%		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch M	vItd
Rad Alpha Spec Analysi	5	·										
Alphaspec Am241, Cm, Americium-241 Curium-242 Curium-243/244	Solid ALL FS U U U	S -0.036 -0.0169 -0.0129	+/-0.123 +/-0.033 +/-0.227	0.157 0.080 0.247	+/-0.123 +/-0.0331 +/-0.227	0.437 0.350 0.619	pCi/g pCi/g pCi/g	BXL1	08/11/0)6 1434	555696	1
Alphaspec Pu, Solid–Al Plutonium–238 Plutonium–239/240	LL FSS U U	-0.0217 -0.0708	+/-0.163 +/-0.0791	0.181 0.128	+/-0.163 +/-0.0795	0.444 0.337	pCi/g pCi/g	BXL1	08/11/(06 1633	555697	2
Liquid Scint Pu241, Soli Plutonium-241 Rad Liquid Scintillation	id-ALL FSS U Analysis	9.52	+/-6.00	4.57	+/6.07	9.61	pCi/g	BXL1	08/16/(06 1326	555698	3
LSC, Tritium Dist, Solid	-HTD2,ALL	FSS										
Tritium	U	0.854	+/-5.88	4.87	+/-5.88	10.5	pCi/g	DFA1	08/09/()6 1231	554582	4
Liquid Scint C14, Solid . Carbon-14	All,FSS	0.347	+/-0.097	0.0674	+/-0.0972	0.141	pCi/g	ATH2	08/09/()6 0734	554583	5
Liquid Scint Fe55, Solid Iron-55	<i>– ALL FSS</i> U	-1.57	+/-46.0	30.7	+/46.0	63.2	pCi/g	MXP1	08/12/0)6 1738	555722	6
<i>Liquid Scint Ni63, Solid</i> Nickel–63	– <i>ALL FSS</i> U	6.39	+/-7.62	7.40	+/-7.62	15.5	pCi/g	MXP1	08/11/0)6 1017	555723	7
Liquid Scint Tc99, Solid Technetium–99	<i>–ALL FSS</i> U	0.0198	+/-0.187	0.156	+/-0.187	0.324	pCi/g	EGD1	08/11/0)6 2131	554580	8

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

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 :	Conne 362 Ir	ecticut ijun Ho	Yankee A ollow Rd	tomic Power							
	Contact: Project:	East H Mr. Ja Soils J	Iampto ick Mc PO# 00	n, Connec Carthy)2332	cticut 06424					R	eport Date: August 21	, 2006
	5	Clier Samp	nt Sample ID: ple ID:			9106-0004-005F 168404005				Project: Client ID: Vol. Recv.:		
Parameter		Qual	lifier	Result	Uncertainty	I	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
6	DOE	RESL F	e−1, N	lodified	· · · · · · · · · · · · · · · · · · ·							
7	DOE	RESL N	Ji-1, N	lodified								
8	DOE	EML H	ASL-3	800, Tc-02	2-RC Modified							
Surrogate/	Fracer recov	ery	Test					Recovery%	Ac	ceptable Limit	\$	
Americium-	243		Alpha	aspec Am2	241, Cm, Solid	ALL		65		(15%-125%)		
Plutonium-2	242		Alpha	aspec Pu, S	Solid-ALL FSS			95		(15%-125%)		
Carrier/Trace	er Recovery		Liqui	d Scint Pu	241, Solid-AL	_ FS		105		(25%-125%)		
Carrier/Trace	er Recovery		Liqui	d Scint Fe	55, Solid-ALL	FS		78		(15%-125%)		
Carrier/Trac	er Recovery		Liqui	d Scint Ni	63, Solid-ALL	FS		80		(25%-125%)		
Carrier/Trace	er Recovery		Liqui	d Scint To	99, 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
- 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 Н
- 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
- Υ QC Samples were not spiked with this compound
- \wedge 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	t Yankee A Iollow Rd	tomic Power						
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	on, Connec cCarthy 02332	cticut 06424		·	R	Report Date: August 21	, 2006	
· · · · · · · · · · · · · · · · · · ·	Client Sample ID: Sample ID: Matrix: Collect Date: Receive Date: Collector: Moisture:			9106-0004-015F 168404006 SE 03-MAY-06 12-MAY-06 Client 26.5%			Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
Rad Alpha Spec Analys	is								
Alphaspec Am241, Cm	Solid ALL FS	S							
Americium-241	U	0.0823	+/-0.203	0.178	+/-0.203	0.469	pCi/g	BXL1 08/11/	06 1434 555696 1
Curium–242	U	-0.0154	+/-0.0301	0.0729	+/-0.0302	0.319	pCi/g		
Curium-243/244	U	-0.0994	+/-0.251	0.300	+/-0.251	0.713	pCi/g		
Alphaspec Pu, Solid–A	LL FSS								
Plutonium-238	U	0.0466	+/-0.213	0.210	+/-0.213	0.521	pCi/g	BXL1 08/11/	06 1633 555697 2
Plutonium-239/240	U	-0.142	+/-0.108	0.191	+/-0.109	0.483	pCi/g		
Liquid Scint Pu241, So	lid–ALL FSS								
Plutonium-241	U	6.64	+/-6.53	5.16	+/-6.57	10.8	pCi/g	BXL1 08/16/0	06 1342 555698 3
Rad Liquid Scintillation	ı Analysis								
LSC, Tritium Dist, Soli	d-HTD2,ALL	FSS							
Tritium	U	-2.9	+/-7.59	6.60	+/7.59	14.2	pCi/g	DFA1 08/09/0)6 1247 554582 4
Liquid Scint C14, Solia	All,FSS								
Carbon-14	U	0.0352	+/-0.0868	0.0713	+/-0.0868	0.149	pCi/g	ATH2 08/09/0)6 0837 554583 5
Liquid Scint Fe55, Soli	d-ALL FSS								
Iron-55	U	1.88	+/46.8	31.3	+/-46.8	64.4	pCi/g	MXP1 08/12/0)6 1754 555722 6
Liquid Scint Ni63, Solid	d–ALL FSS								
Nickel-63	U	3.88	+/-7.46	7.40	+/-7.46	15.5	pCi/g	MXP1 08/11/0	06 1033 555723 7
Liquid Scint Tc99. Soli	d–ALL FSS								
Technetium-99	U	0.0894	+/-0.198	0.163	+/-0.198	0.338	pCi/g	EGD1 08/11/0	06 2147 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 He	Yankee A ollow Rd	tomic Power						
	Contact: Project:	East Hampto Mr. Jack Mc Soils PO# 00	on, Connec Carthy 02332	ticut 06424				J	Report Date: August 21,	2006
		Client Sarr Sample ID	nple ID:		9106-000 16840400)4-015F)6		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
6	DOE	RESL Fe-1, N	Modified							
7	DOE	RESL Ni–1, N	Aodified							
8	DOE	EML HASL-	300, Tc-02	2-RC Modified						

Surrogate/Tracer recovery	Test	Recovery%	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:

6 7 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
- 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
- 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
- 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 \wedge
- h Preparation or preservation holding time was exceeded

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Certificate of Analysis

Company : Address :	Connecticut 362 Injun H	t Yankee A Iollow Rd	tomic Power									
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	on, Connec cCarthy 02332	eticut 06424				R	Report Date: August 21, 2006				
	Client Sam Sample IE Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: ate:		9106-0 168404 SE 02-MA 09-MA Client 56.2%	005-010F 007 Y-06 Y-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch Mtd	
Rad Alpha Spec Analys	is										J	
Alphaspec Am241, Cm,	Solid ALL FS	S										
Americium-241	U	-0.128	+/-0.0939	0.142	+/-0.0942	0.385	pCi/g	BXL1	08/11/0	6 1434 :	555696 1	
Curium-242	U	-0.0115	+/-0.128	0.147	+/-0.128	0.450	pCi/g					
Curium-243/244	U	-0.0333	+/-0.122	0.149	+/-0.122	0.401	pCi/g					
Alphaspec Pu, Solid-A	LL FSS						C 1					
Plutonium-238	U	0.0548	+/-0.169	0.158	+/-0.170	0.403	pCi/g	BXL1	08/11/0	6 1633 3	555697 2	
Plutonium-239/240	0	0.0195	+/-0.121	0.117	+/-0.121	0.322	pCi/g					
Liquid Scint Pu241, Sol	IId-ALL FSS	10.4		c 07			<u> </u>	DV/ 1	00/11/0	< 10 FO		
Plutonium-241	U	10.4	+/-6.89	5.27	+/-6.9/	11.1	pCi/g	BXLI	08/16/0	6 1358 :	555698 3	
Kau Liquiu Scintination	Analysis	DCC.										
LSC, Tritium Dist, Solid	d-HID2,ALL	155	1/ 6.96	576	1 6 96	13.4	-Ci/a	DEAL	00/00/0	C 1202 /	554500 A	
		0.00	+/-0.80	5.70	+/-0.80	12.4	pCi/g	DFAI	08/09/0	0 1303 2	554582 <u>4</u>	
Liquid Scint C14, Solid	All,FSS	0.0(2)	1/ 0.0201	0.0644	1/ 0.0801	0.125	-Cile	A TT 1 2	00/00/0	< 1017 J	554507 5	
Carbon-14		0.0030	+/-0.0801	0.0044	+/-0.0801	0.155	pCI/g	ATH2	08/09/0	0 1017 2	554583 5	
Liquid Scint Fe55, Solid	d-ALL FSS	26.1	. / . 4 . 1	20.7	. / . 4 . 1	50.0	- Cite	N/VD1	00/10/0	< 1011 J	cccano (
Iron-55	0	30.1	+/44.1	28.7	+/-44.1	59.0	pC1/g	MAPI	08/12/0	0 1811 2	555722 6	
Liquid Scint Ni63, Solid	t-ALL FSS	= 0 (. / 10.0	10.0	. (10.2	20.0	0.1		00/11/0	< 10.10 V		
Nickel-63	U	7.26	+/-10.2	10.0	+/-10.2	20.9	pCi/g	MXPI	08/11/0	5 1049 5	55723 7	
Liquid Scint Tc99, Solid	t-ALL FSS	0.07	1/ 0.100	0.170	1 0 100	0.251	0.1	FOR	00/11/0	< 0000 ·	554500 0	
Technetium-99	U	-0.05	+/-0.199	0.169	+/-0.199	0.351	pCi/g	EGDI	08/11/0	5 2203 5	>54580 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 H	Yankee A ollow Rd	tomic Power						
	Contact:	East Hampto Mr. Jack Mc	on, Connec Carthy	ticut 06424				R	eport Date: August 21	, 2006
	Project:	Soils PO# 0	02332							
		Client Sarr Sample ID	nple ID: :		9106-0 168404	005010F 007		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
6	DOE R	ESL Fe-1, N	Modified					e blender		<u></u>
7	DOE R	ESL Ni-1, N	Modified							
8	DOE E	ML HASL-	300, Tc–0	2-RC Modified						
Surrogate/3	Fracer recove	ry Test				Recovery%	Ac	ceptable Limit	5	
Americium-	243	Alph	aspec Am	241, Cm, Solid A	ALL	85		(15%-125%)		
Plutonium-2	242	Alph	aspec Pu, S	Solid-ALL FSS		91		(15%-125%)		
Carrier/Trace	er Recovery	Liqui	id Scint Pu	241, Solid-ALI	. FS	92		(25%-125%)		
Carrier/Trace	er Recovery	Liqui	id Scint Fe	55, Solid-ALL	FS	81		(15%-125%)		
Carrier/Trace	er Recovery	Liqui	id Scint Ni	63, Solid-ALL	FS	64		(25%-125%)		
Carrier/Trace	er Recovery	Liqui	id Scint To	99, Solid-ALL	FS	77		(15%-125%)		
Notes: The Qual	ifiers in this	report are d	efined 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
- 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
- QC Samples were not spiked with this compound Υ
- $^{\wedge}$ 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	Yankee A ollow Rd	tomic Power										
Contact: Project:	East Hampt Mr. Jack Me Soils PO# 0	on, Connec cCarthy 02332	ticut 06424			Report Date: August 21, 2006							
	Client San Sample IE Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: ate:		9106-00 1684040 SE 02-MA 09-MA Client 32.3%	005-014F 008 Y-06 Y-06		Proiect: Client ID: Vol. Recv.:	YANK YANK	201204 2001				
Parameter	Qualifier	Result	Uncertainty	LC	ŤPU	MDA	Units	DF	Analys	t Date	Time	Batch N	/Itd
Rad Alpha Spec Analys	is					·							<u> </u>
Alphaspec Am241, Cm	, Solid ALL FS	S											
Americium-241	U	0.00591	+/-0.219	0.231	+/-0.219	0.608	pCi/g		BXLI	08/11/06	5 1434	555696	1
Curium-242	U	-0.04	+/-0.0554	0.134	+/-0.0557	0.494	pCi/g						
Curium-243/244	U	0.0634	+/-0.261	0.249	+/-0.261	0.646	pCı/g						
Alphaspec Pu, Solid–A	LL FSS												
Plutonium-238	U	-0.0694	+/-0.106	0.160	+/-0.106	0.434	pCi/g		BXL1	08/11/06	o 1633	555697	2
Plutonium-239/240	U	-0.0287	+/-0.098	0.127	+/0.0981	0.369	pC1/g						
Liquid Scint Pu241, So	lid-ALL FSS						<i></i>			0011010			
Plutonium-241	U	4.68	+/-8.01	6.48	+/-8.02	13.6	pCi/g		BXLI	08/16/06	, 1415	555698	3
Rad Liquid Scintillation	1 Analysis												
LSC, Tritium Dist, Soli	d-HTD2,ALL	FSS		4.00	11 (20	10.6	C ¹		DEAL	00/00/07	1210	554592	
Tritium	U	6.02	+/0.38	4.90	+/-0.38	10.6	pC1/g		DFAI	08/09/00	1319	554582	4
Liquid Scint C14, Solid	I All,FSS	0.0000		0.0455		0.127	<u> </u>			00100107		554502	-
Carbon-14	U	0.0892	+/-0.082/	0.0655	+/-0.0827	0.137	pC1/g		ATH2	08/09/06	1424	554583	2
Liquid Scint Fe55, Soli	d–ALL FSS						~						
Iron-55	U	19.8	+/-46.3	30.6	+/-46.3	62.9	pCı/g		MXPI	08/12/06	1827	555722	6
Liquid Scint Ni63, Soli	d–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, Soli	d–ALL FSS												
Technetium-99	U	-0.134	+/-0.192	0.167	+/-0.192	0.346	pCi/g		EGDI	08/11/06	2218	554580	8

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				
The following A Method	Analytical Methods were performed Description				

1DOE EML HASL=300, Am=03=RC Modified2DOE EML HASL=300, Pu=11=RC Modified3DOE EML HASL=300, Pu=11=RC Modified4EPA 906.0 Modified5EPA EERF C=01 Modified

EFA EEKF C-01 Modified

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power 362 Injun Hollow Rd Address : East Hampton, Connecticut 06424 Report Date: August 21, 2006 Mr. Jack McCarthy Contact: Project: Soils PO# 002332 Client Sample ID: 9106-0005-014F Project YANK01204 Client ID: 168404008 YANK001 Sample ID: Vol. Recv.: Parameter Qualifier Result LC TPU Uncertainty MDA Units **DF** Analyst Date **Time Batch Mtd** DOE RESL Fe-1, Modified DOE RESL Ni-1, Modified 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%)74 Carrier/Tracer Recovery Liquid Scint Pu241, Solid-ALL FS (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:

6

7

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 >
- 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
- С Analyte has been confirmed by GC/MS analysis
- Results are reported from a diluted aliquot of the sample D
- Analytical holding time was exceeded Η
- I 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
- QC Samples were not spiked with this compound Y
- Λ 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	Yankee A ollow Rd	tomic Power									
Contact: Project:	East Hampte Mr. Jack Me Soils PO# 0	on, Connec cCarthy 02332	eticut 06424		Report Date: August 21, 2006							
	Client Sample ID: Sample ID: Matrix: Collect Date: Receive Date: Collector: Moisture:			9106-0006-005F 168404009 SE 28-APR-06 12-MAY-06 Client 16.5%		Project: YANK01204 Client ID: YANK001 Vol. Recv.:						
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch M	Mtd
Rad Alpha Spec Analys	is											
Alphaspec Am241, Cm,	Solid ALL FS	S										
Americium-241	U	-0.0851	+/-0.136	0.106	+/-0.136	0.390	pCi/g	BXL1	08/16/0	6 0949	557837	1
Curium-242	U	-0.0253	+/-0.0495	0.120	+/-0.0496	0.525	pCi/g					
Curium-243/244	U	-0.0479	+/-0.0542	0.131	+/-0.0545	0.443	pC1/g					
Alphaspec Pu, Solid-A	LL FSS	0.0103		0.110		0 202		DVL	00/11/0	() ())	555(07	2
Plutonium-238 Plutonium-239/240	U	0.0183	+/-0.113 +/-0.0662	0.110	+/-0.113 +/-0.0662	0.303	pCi/g	BALI	08/11/0	5 1033	222697	3
Liquid Spint Dr. 241 Sp		0.00122	17 0.0002	0.0094	17 0.0002	0.221	peng					
Plutonium-241	III - ALL FSS	1 13	+/-5 83	4 67	+/5 85	0.82	nCi/a	BXL1	08/16/0	6 1/31	555608	4
Rad Liquid Scintillation	Analysis	7.75	17 5.65	4.07	17 5.05	9.02	peng	DALI	00/10/0	5 1451	555676	7
ISC Tritium Dist Soli	d = HTD2 ALL	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	AllESS						F - 8					
Carbon-14		0.142	+/-0.0798	0.061	+/0.0799	0.127	pCi/g	ATH2	08/09/0	5 1719	554583	6
Liauid Scint Fe55. Solid	d–ALL FSS											•
Iron-55	U	12.6	+/-47.6	31.7	+/-47.6	65.3	pCi/g	MXP1	08/12/06	5 1843	555722	7
Liquid Scint Ni63, Solid	I-ALL FSS											
Nickel-63	U	7.70	+/-9.56	9.31	+/-9.56	19.5	pCi/g	MXP1	08/11/06	5 1122	555723	8
Liquid Scint Tc99, Solid	d-ALL FSS											
Technetium-99	U	-0.00659	+/-0.185	0.156	+/-0.185	0.323	pCi/g	EGD1	08/11/06	5 2234	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 Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	EPA 906.0 Modified

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power Address : 362 Injun Hollow Rd East Hampton, Connecticut 06424 Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Client Sample ID:9106-0006-005FProject:YANK01204Sample ID:168404009Client ID:YANK001Vol. Recv.:Vol. Recv.:Vol. Recv.:

Report Date: August 21, 2006

Parameter	Qualifier R	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
6	EPA EERF C-01 Modi	ified							
7	DOE RESL Fe-1, Mod	lified							

B DOE RESL Ni-1, Modified
 D 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	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 H	t Yankee A Iollow Rd	tomic Power									
Contact:	East Hampt Mr. Jack M	on, Connec cCarthy	cticut 06424				R	leport Date: Au	gust 21,	2006		
Project:	Soils PO# 0	02332										
	Client San Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: Pate:		9106-00 1684040 SE 05-MA 26-MA Client 34.8%	008-006F)10 Y-06 Y-06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	t Date	Time	Batch M	Mtd
Rad Alpha Spec Analys	is	·····							,			
Alphaspec Am241, Cm,	Solid ALL FS	SS										
Americium-241	U	0.129	+/-0.195	0.0758	+/-0.196	0.332	pCi/g	BXL1	08/16/0	6 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–A	LL FSS											
Plutonium-238	U	-0.0276	+/-0.0711	0.0967	+/-0.0712	0.275	pCi/g	BXL1	08/11/0	6 1633 :	555697	3
Plutonium-239/240	U	0.00359	+/-0.113	0.118	+/-0.113	0.317	pCi/g					
Liquid Scint Pu241, Sol	id–ALL FSS											
Plutonium-241		14.9	+/-6.37	4.64	+/-6.51	9.75	pCi/g	BXL1	08/16/0	6 1447 :	555698	4
Rad Liquid Scintillation	Analysis											
LSC, Tritium Dist, Solid	d–HTD2,ALL	FSS										
Tritium	U	0.00	+/-6.06	5.09	+/-6.06	10.7	pCi/g	DFA1	08/10/0	6 21 50 3	554582	5
Liquid Scint C14, Solid	All,FSS											
Carbon-14	U	0.107	+/-0.0846	0.0664	+/-0.0846	0.139	pCi/g	ATH2	08/09/0	6 1822 :	554583	6
Liquid Scint Fe55, Solid	d–ALL FSS											
Iron-55	U	15.1	+/-41.4	27.5	+/-41.4	56.6	pCi/g	MXP1	08/12/0	6 1900 క	555722	7
Liquid Scint Tc99, Solid	t-ALL FSS											
Technetium-99	U	0.258	+/-0.225	0.179	+/-0.225	0.373	pCi/g	EGD1	08/11/0	6 2251 5	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, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	EPA 906.0 Modified
6	EPA EERF C-01 Modified
7	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 San Sample ID	nple ID:):		9106-000 16840401	8–006F 0		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Proje	et: Soils PO# 0	02332							
Conta	East Hampto ct: Mr. Jack Mo	on, Connec cCarthy	cticut 06424				F	Report Date: August 21,	2006
Comp Addre	eany : Connecticut css : 362 Injun H	Yankee A ollow Rd	tomic Power						

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

Surrogate/Tracer recovery	Test	Recovery%	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:

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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
- 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	t Yankee A Iollow Rd	tomic Power									
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	on, Connec cCarthy 02332	cticut 06424				Я	Report Date: Au	igust 21, 2	2006		
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: ate:		9106-00 1684040 SE 08-MA 26-MA Client 35.7%	008-008F 011 Y-06 Y-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	st Date	Time	Batch [Mtd
Rad Alpha Spec Analys	is											
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	6 1434	555696	1
Curium-242	U	-0.0482	+/-0.142	0.132	+/-0.142	0.446	pCi/g					
Curium-243/244	0	-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	6 1633	555697	2
Plutonium-239/240	U	-0.0315	+/-0.114	0.137	+/-0.114	0.353	pC1/g					
Liquid Scint Pu241, So	lid-ALL FSS			5.00	1/ 6 80	10.7	0.1	DVL	00/1//0	< 150A		-
Plutonium-241	Amalwaia	11.5	+/-6./2	5.08	+/-0.80	10.7	pCI/g	BALI	08/16/00	5 1504	222698	3
Kad Liquid Scintillation	Analysis	FCC										
LSC, Tritium Dist, Solu Tritium	a-HID2,ALL	F35 0.00	1/ 5.02	4.07	1/ 5.02	10.7	-Ci/a	DEAL	00/00/04	6 1 4 0 7	551500	4
	U	0.00	+/-3.92	4.97	+/-3.92	10.7	pC1/g	DFAI	08/09/00	5 1407	554582	4
Liquid Scint C14, Solid	<i>All,FSS</i>	0.0220	1/ 0.0745	0.0626	1/ 0.0745	0 122	»Cila	ATU2	00/00/04	6 1024	551507	5
	0	-0.0238	+/-0.0743	0.0030	+/-0.0743	0.155	pC1/g	AIII	08/09/00	3 1924	334383	3
Liquid Scint Fe55, Soli	a-ALL FSS	10.7	1/ 40.0	27.5	1/ 40.0	56.0	-Ci/a	MVDI	09/12/04	(1016	555700	~
		-10.7	+/-40.9	21.5	+/-40.9	30.8	peng	MAPI	08/12/00	3 1910	555722	0
Liquid Scint Tc99, Solid Technotium=00	a-ALL FSS	0.0056	+/-0.211	0.174	+/-0 211	0 261	nCi/a	FGDI	08/11/04	6 2207	554580	7
r comcuum ~ 77	U	0.0750	1/ 0.211	0.174	1 0.211	0.301	peng	EODI	00/11/0U	, 2301	554500	,
The following Prep Me	thods were p	erformed										

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 Description Method

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 R	esult Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
	Client Sample Sample ID:	ID:	9106-000 16840401	8–008 F 1		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Project:	Soils PO# 00233	32						
Contact:	East Hampton, C Mr. Jack McCar	Connecticut 06424 thy				F	Report Date: August 21,	2006
Company Address :	: Connecticut Yar 362 Injun Hollo	nkee Atomic Power w Rd						

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	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:

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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
- 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 :	Connecticu 362 Injun H	t Yankee A Iollow Rd	tomic Power									
Contact: Project:	East Hampt Mr. Jack M Soils PO# 0	on, Connec cCarthy 002332	ticut 06424				R	eport Date: Au	gust 21, 20	006		
	Client Sar Sample II Matrix: Collect Da Receive D Collector: Moisture:	nple ID: D: ate: bate:		9106-0 168404 SE 11-MA 08-JUN Client 33%	009-002F 012 Y-06 V-06		Project: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst	t Date	Time	Batch I	Mtd
Rad Alpha Spec Analys	is											
Alphaspec Am241, Cm,	Solid ALL FS	SS										
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	0	0.013	+/-0.268	0.281	+/0.268	0.687	pC1/g					
Alphaspec Pu, Solid-A	LL FSS	0.00505		0.0000			0.1	DW	00/11/07			•
Plutonium-238	U	-0.00587	+/-0.0493	0.0279	+/-0.0494	0.122	pCi/g	BXLI	08/11/06	1632 :	555697	2
Plutonium-239/240		0.0186	+/0.0492	0.0278	+/-0.0493	0.122	pCI/g					
Liquid Scint Pu241, Sol	lid-ALL FSS	12.6		6 1 2	. (7.01	10.0	C ' (DVL	00/10/00	1.500		•
Plutonium-241		- 13.6	+/-6.90	5.13	+/-/.01	10.8	pC1/g	BALI	08/16/06	1520 :	>>>698	3
Rad Gas Flow Proportio		g										
GFPC, Sr90, solid-AL	LFSS	0.0151	1/ 0.0146	0.0114	1/ 0.0146	0.0242	- C:/-	DVF1	00/14/07	0074	55/250	
Strontium-90 Red Liquid Scintillation	U	0.0151	+/0.0146	0.0114	+/-0.0146	0.0242	pC1/g	BAFI	08/14/06	0834 :	556350	4
	I Allalysis	FCC										
LSC, Tritium Dist, Solid	a-HID2,ALL	F35 4 12	1/ 9.26	6 70	1 9 26	14.5	-Ci/a	DEA1	00/00/02	1400 4	564690	F
		4.12	+/-8.30	0.70	+/-8.30	14.5	pC1/g	DFAI	08/09/06	1422 3)54582	3
Liquid Scint C14, Solid	All,FSS	0.046	1 0 0755	0.0(12	1 0 0755	0 100	C:/-	A TT 10	00/00/07	2027	554500	
Carbon-14	U	0.046	+/-0.0755	0.0613	+/-0.0755	0.128	pC1/g	ATH2	08/09/06	2027 3	>4383	6
Liquid Scint Fe55, Solid	d-ALL FSS			•			011	141/01	00/10/06			_
Iron-55	U	12.9	+/-40.6	26.8	+/-40.6	55.2	pCi/g	MXPI	08/12/06	1932 5)55/22	7
Liquid Scint Tc99, Solid	d–ALL FSS						~					_
Technetium-99	U	0.078	+/-0.203	0.168	+/-0.203	0.348	pCi/g	EGD1	08/11/06	2323 5	,54580	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	nalytical Methods were performed					
Method	Description					

1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 905.0 Modified

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_										
6	EPA H	EERF C-01 M	lodified							
5	EPA 9	06.0 Modified	ł							
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
		Client Sam Sample ID	ple ID:		9106-000 16840401	09-002F 2		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
	Project:	Soils PO# 00	02332							
	East Hampton, Connecticut 06424 Contact: Mr. Jack McCarthy Project: Saile PO# 002322				Report Date: August 21, 2					, 2006
	Company : Address :	Connecticut 362 Injun Ho	Yankee A ollow Rd	tomic Power						

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	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:

5 6

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	t Yankee A ollow Rd	tomic Power								
Contact:	East Hampt Mr. Jack Me	on, Connec cCarthy	cticut 06424	Report Date: August 21, 2006							
Project:	Soils PO# 0	02332									
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID: D: ate: ate:		9106-0 168404 SE 15-MA 08-JUN Client 28.4%	009-017F 013 Y-06 V-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001			
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	Date Ti	me Batc	h Mtd
Rad Alpha Spec Analys	is								,		
Alphaspec Am241, Cm,	Solid ALL FS	S									
Americium-241	U	0.0755	+/-0.242	0.230	+/-0.243	0.574	pCi/g	BXL1	08/11/06 14	34 5556	96 1
Curium-242	U	0.0957	+/-0.220	0.171	+/-0.220	0.509	pCi/g				
Curium-243/244	U	-0.073	+/-0.214	0.256	+/-0.214	0.627	pCi/g				
Alphaspec Pu, Solid–A	LL FSS										
Plutonium-238	U	-0.00629	+/-0.0529	0.0299	+/-0.0529	0.131	pCi/g	BXL1	08/11/06 16	32 55569	97 2
Plutonium-239/240	U	0.0262	+/-0.0513	0.00	+/-0.0514	0.0709	pCi/g				
Liquid Scint Pu241, Sol	id-ALL FSS										
Plutonium-241		13.3	+/-6.66	4.95	+/6.77	10.4	pCi/g	BXL1	08/16/06 15	36 5556	98 3
Rad Gas Flow Proportio	onal Counting	3									
GFPC, Sr90, solid-AL	L FSS										
Strontium-90	U	0.0205	+/-0.0151	0.0116	+/-0.0151	0.0246	pCi/g	BXF1	08/14/06 08	33 5563	50 4
Rad Liquid Scintillation	Analysis										
LSC, Tritium Dist, Solid	d-HTD2,ALL	FSS									
Tritium	U	0.583	+/-7.98	6.65	+/-7.98	14.4	pCi/g	DFA1	08/09/06 14	38 55458	32 5
Liquid Scint C14, Solid	All,FSS										
Carbon-14	U	0.0271	+/-0.0759	0.0625	+/-0.0759	0.131	pCi/g	ATH2	08/09/06 21	29 55458	33 6
Liquid Scint Fe55, Solid	₫ALL FSS										
Iron-55	U	-61.9	+/-150	102	+/-150	210	pCi/g	MXP1	08/12/06 19	49 55572	22 7
Liquid Scint Tc99, Solid	t-ALL FSS										
Technetium-99	U	0.0628	+/-0.200	0.165	+/-0.200	0.343	pCi/g	EGD1	08/11/06 23	38 55458	30 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			an i rindrard		

- 2 DOE EML HASL-300, Pu-11-RC Modified
- 3 DOE EML HASL-300, Pu-11-RC Modified
- 4 EPA 905.0 Modified

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Certificate of Analysis

	Company : Address :	Connecticut 362 Injun H	Yankee A ollow Rd	tomic Power							
C: Pr	Contact: Project:	East Hampton, Connecticut 06424 Mr. Jack McCarthy Soils PO# 002332					Report Date: August 21, 2006				
		Client Sam Sample ID	nple ID:		9106-000 16840401	09-017F 3		Project: Client ID: Vol. Recv.:	YANK01204 YANK001		
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analyst Date	Time Batch Mtd	
5	EPA 9	06.0 Modifie	d								
6	EPA I	EERF C-01 M	lodified								
7	DOE	RESL Fe-1, N	Modified								
8	DOE	EML HASL-	300, Tc-02	2-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:

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
- QC Samples were not spiked with this compound Y
- \wedge 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

ton, Connec cCarthy)02332 mple ID: D: ate: Date: Result 55 0.00677 0.0854 0.0361	Uncertainty +/-0.227 +/-0.167 +/-0.242	9106-0 168404 SE 04-MA 17-MA Client 27.3% LC 0.238 0.00	010-001F 014 Y-06 Y-06 TPU +/-0.227 +/-0.168	MDA 0.628 0.231	Proiect: Client ID: Vol. Recv.: Units	Report Date: Au YANK01204 YANK001 DF Analys BXL1	igust 21, 2 t Date	006 Time	Batch]	
nple ID: D: ate: Date: Result 55 0.00677 0.0854 0.0361	+/-0.227 +/-0.167 +/-0.242	9106-0 168404 SE 04-MA 17-MA Client 27.3% LC 0.238 0.00	010-001F 014 .Y-06 .Y-06 TPU +/-0.227 +/-0.168	MDA 0.628 0.231	Project: Client ID: Vol. Recv.: Units	YANK01204 YANK001 DF Analys BXL1	t Date	Time	Batch]	
Result 555 0.00677 0.0854 0.0361	+/-0.227 +/-0.167 +/-0.242	LC 0.238 0.00	TPU +/-0.227 +/-0.168	MDA 0.628 0.231	Units pCi/g	DF Analys BXL1	t Date	Time	Batch]	Mtd
55 0.00677 0.0854 0.0361	+/-0.227 +/-0.167 +/-0.242	0.238	+/-0.227 +/-0.168	0.628	pCi/g	BXL1	08/11/06			
55 0.00677 0.0854 0.0361	+/-0.227 +/-0.167 +/-0.242	0.238	+/-0.227 +/-0.168	0.628	pCi/g	BXL1	08/11/06			1
0.00677 0.0854 0.0361	+/-0.227 +/-0.167 +/-0.242	0.238	+/-0.227 +/-0.168	0.628	pCi/g	BXL1	08/11/06			1
0.0854 0.0361	+/-0.167 +/-0.242	0.00	+/-0.168	0.231	A .1		00/11/00	1434	555696	1
0.0361	+/-0.242			0.201	pCi/g					
		0.241	+/-0.242	0.634	pC1/g		•			
0 172	1/0101	0.142	1/ 0.182	0 221	C'I	DVL	00/11/07	2250		•
0.1/3	+/-0.181 +/-0.0865	0.143	+/-0.182 +/-0.0866	0.331	pCi/g	BALI	08/11/06	2250	555697	2
0.0342	17 0.0805	0.0751	17 0.0800	0.235	peng					
13.0	+/-6 44	1 78	+/6 54	10.0	nCi/a	BYI 1	08/16/06	1552	555600	2
p 15.0	17 0.44	4.70	17 0.54	10.0	peng	DALI	00/10/00	1555	555098	3
•										
-0.0128	+/-0.0141	0.0125	+/-0.0141	0.0262	pCi/g	BXF1	08/14/06	0833	556350	4
					F 8					•
FSS										
0.548	+/-7.50	6.25	+/-7.50	13.5	pCi/g	DFA1	08/09/06	1454	554582	5
0.0555	+/-0.0809	0.0655	+/-0.0809	0.137	pCi/g	ATH2	08/09/06	2232	554583	6
-18.1	+/-47.6	32.3	+/47.6	66.6	pCi/g	MXP1	08/12/06	2005	555722	7
					-					
0.12.	+/-0.205	0.167	+/-0.205	0.347	pCi/g	EGD1	08/11/06	2354	554580	8
	FSS 0.548 0.0555 -18.1 0.134	FSS 0.548 +/-7.50 0.0555 +/-0.0809 -18.1 +/-47.6 0.134 +/-0.205	FSS 0.548 +/-7.50 6.25 0.0555 +/-0.0809 0.0655 -18.1 +/-47.6 32.3 0.134 +/-0.205 0.167	FSS 0.548 $+/-7.50$ 6.25 $+/-7.50$ 0.0555 $+/-0.0809$ 0.0655 $+/-0.0809$ -18.1 $+/-47.6$ 32.3 $+/-47.6$ 0.134 $+/-0.205$ 0.167 $+/-0.205$	FSS 0.548 $+/-7.50$ 6.25 $+/-7.50$ 13.5 0.0555 $+/-0.0809$ 0.0655 $+/-0.0809$ 0.137 -18.1 $+/-47.6$ 32.3 $+/-47.6$ 66.6 0.134 $+/-0.205$ 0.167 $+/-0.205$ 0.347	FSS 0.548 +/-7.50 6.25 +/-7.50 13.5 pCi/g 0.0555 +/-0.0809 0.0655 +/-0.0809 0.137 pCi/g -18.1 +/-47.6 32.3 +/-47.6 66.6 pCi/g 0.134 +/-0.205 0.167 +/-0.205 0.347 pCi/g	FSS 0.548 +/-7.50 6.25 +/-7.50 13.5 pCi/g DFA1 0.0555 +/-0.0809 0.0655 +/-0.0809 0.137 pCi/g ATH2 -18.1 +/-47.6 32.3 +/-47.6 66.6 pCi/g MXP1 0.134 +/-0.205 0.167 +/-0.205 0.347 pCi/g EGD1	FSS 0.548 +/-7.50 6.25 +/-7.50 13.5 pCi/g DFA1 08/09/06 0.0555 +/-0.0809 0.0655 +/-0.0809 0.137 pCi/g ATH2 08/09/06 -18.1 +/-47.6 32.3 +/-47.6 66.6 pCi/g MXP1 08/12/06 0.134 +/-0.205 0.167 +/-0.205 0.347 pCi/g EGD1 08/11/06	FSS 0.548 +/-7.50 6.25 +/-7.50 13.5 pCi/g DFA1 08/09/06 1454 14.5 0.0555 +/-0.0809 0.0655 +/-0.0809 0.137 pCi/g ATH2 08/09/06 2232 18.1 -18.1 +/-47.6 32.3 +/-47.6 66.6 pCi/g MXP1 08/12/06 2005 134 0.134 +/-0.205 0.167 +/-0.205 0.347 pCi/g EGD1 08/11/06 2354 14	FSS 0.548 +/-7.50 6.25 +/-7.50 13.5 pCi/g DFA1 08/09/06 1454 554582 0.0555 +/-0.0809 0.0655 +/-0.0809 0.137 pCi/g ATH2 08/09/06 2232 554583 -18.1 +/-47.6 32.3 +/-47.6 66.6 pCi/g MXP1 08/12/06 2005 555722 0.134 +/-0.205 0.167 +/-0.205 0.347 pCi/g EGD1 08/11/06 2354 554580

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				

	DOL LINE HASE 500, All 05 RC Modilio
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified

4 EPA 905.0 Modified

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Certificate of Analysis

	Company : Address :	Connecticut 362 Injun Ho	Yankee A ollow Rd	tomic Power							
	Contact:	East Hampto Mr. Jack Mc	on, Connec Carthy	cticut 06424				I	Report Da	te: August 21,	2006
	Project:	Soils PO# 00	02332								
		Client Sam Sample ID	ple ID: :		9106-001 16840401	0-001F 4		Project: Client ID: Vol. Recv.:	YANK YANK	01204 001	
Parameter		Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst Date	Time Batch Mtd
5	EPA 9	06.0 Modified	d								
6	EPA I	EERF C-01 M	lodified								
7 ·	DOE	RESL Fe–1, N	Aodified								

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits	<i>.</i>
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:

5 6 7

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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	t Yankee A Iollow Rd	tomic Power									
Contact: Project:	East Hampto Mr. Jack Mo Soils PO# 0	on, Connec cCarthy 02332	eticut 06424				R	Report Date: Au	igust 21, 2	2006		
	Client San Sample ID Matrix: Collect Da Receive D Collector: Moisture:	nple ID:): ate: ate:		9106-0 168404 SE 04-MA 17-MA Client 28.1%	010-012F 015 Y-06 Y-06		Proiect: Client ID: Vol. Recv.:	YANK01204 YANK001				
Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF Analys	t Date	Time	Batch N	1td
Rad Alpha Spec Analys	sis											
Alphaspec Am241, Cm	, Solid ALL FS	S										
Americium-241	U	0.110	+/-0.184	0.140	+/-0.184	0.386	pCi/g	BXL1	08/11/06	5 1434	555696	1
Curium–242	U	-0.0547	+/-0.141	0.192	+/-0.141	0.544	pCi/g					
Curium-243/244	U	-0.126	+/-0.184	0.245	+/0.185	0.597	pCi/g					
Alphaspec Pu, Solid–A	ALL FSS											
Plutonium-238	U	-0.00157	+/-0.126	0.122	+/-0.126	0.291	pCi/g	BXL1	08/11/06	2250	555697	2
Plutonium-239/240	U	0.0867	+/-0.0869	0.0406	+/-0.0872	0.128	pCi/g					
Liquid Scint Pu241, So	olid–ALL FSS											
Plutonium-241	U	8.31	+/-6.16	4.77	+/-6.21	10.0	pCi/g	BXL1	08/16/06	1609	555698	3
Rad Gas Flow Proporti	onal Counting	8										
GFPC, Sr90, solid-AL	L FSS											
Strontium-90		-0.00771	+/-0.0144	0.0124	+/-0.0144	0.0263	pCi/g	BXF1	08/14/06	0833	556350	4
Rad Liquid Scintillation	n Analysis											
LSC, Tritium Dist, Soli	d-HTD2,ALL	FSS										
Tritium	U	0.896	+/-6.17	5.11	+/-6.17	11.0	pCı/g	DFAI	08/09/06	1510	554582	5
Liquid Scint C14, Solia	I All,FSS											
Carbon-14	U	0.0162	+/-0.0763	0.0633	+/-0.0763	0.132	pCi/g	ATH2	08/09/06	2334	554583	6
Liquid Scint Fe55, Soli	d–ALL FSS											
Iron-55	U	23.3	+/-49.3	32.5	+/-49.3	67.0	pCi/g	MXP1	08/12/06	2021	555722	7
Liquid Scint Tc99, Soli	d–ALL FSS											
Technetium-99	U	0.0577	+/-0.206	0.171	+/-0.206	0.354	pCi/g	EGD1	08/12/06	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 A	Analytical Methods were performed				
Method	Description				
1	DOE EML HASL-300, Am-05-RC Modified				

- 2 DOE EML HASL-300, Pu-11-RC Modified
- 3 DOE EML HASL-300, Pu-11-RC Modified
- 4 EPA 905.0 Modified

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Certificate of Analysis

	Company : Address :	Connecticu 362 Injun H	t Yankee A Iollow Rd	tomic Power						
	Contact:	East Hampton, Connecticut 06424 Mr. Jack McCarthy						Re	port Date: August 21	, 2006
	Project:	Soils PO# (002332							
		Client Sar Sample II	nple ID: D:		9106-(168404	0010-012F 1015		Project: Client ID: Vol. Recv.:	YANK01204 YANK001	
Parameter		Qualifier	Result	Uncertainty	LC	C TPU	MDA	Units	DF Analyst Date	Time Batch Mtd
5	EPA 9	06.0 Modifi	ed						·····	, <u>, , , , , , , , , , , , , , , , , , </u>
6	EPA B	ERF C-01 I	Modified							
7	DOE	RESL Fe-1,	Modified							
8	DOE	EML HASL-	-300, Tc-0	2-RC Modified						
Surrogate/	Fracer recov	ery Test	t			Recovery%	A	cceptable Limits		×
Americium-	243	Alp	haspec Am	241, Cm, Solid	ALL .	81		(15%-125%)		
Plutonium-2	.42	Alp	haspec Pu,	Solid-ALL FSS		91		(15%–125%)		
Carrier/Trace	er Recovery	Liqu	uid Scint Pu	1241, Solid-ALI	_ FS	99		(25%-125%)		
Carrier/Trace	er Recovery	GFF	PC, Sr90, so	olid-ALL FSS		68		(25%-125%)		
Carrier/Trace	er Recovery	Liqu	uid Scint Fe	55, Solid-ALL	FS	74		(15%-125%)		,
Carrier/Trace	er Recovery	Liqu	id Scint To	:99, Solid-ALL	FS	75		(15%-125%)		
Notes:										

The Qualifiers in this report are defined as follows :

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- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- 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
- 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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			00								
Client :	Connecticut 362 Injun H	t Yankee Atomic Power Iollow Rd			- .			Report D	Date: August 21, 200 Page 1 of 6	16	
Contact:	East Hampt Mr. Jack M	ton, Connecticut cCarthy									
Workorder:	168404							÷			
Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anls	t Date Time	
Rad Alpha Spec Batch	555696										
QC120115313	30 168340011	DUP									
Americium-241		U	-0.000522	U	0.0578	pCi/g	204		(0% - 100%) BXL	1 08/11/06 14:34	
		Uncert:	+/-0.0385		+/-0.278						
		TPU:	+/-0.0385		+/-0.279		-		(00)		
Curium-242		U	0.00	U	-0.0405	pCi/g	200		(0% - 100%)		
		Uncert:	+/-0.0756		+/-0.0562						
G : 0.00		TPU:	+/-0:0756		+/-0.0565	0.1	00		(00/ 1000/)		
Curium-243/244	\$	U	-0.0177	U	-0.0517	pC1/g	98		(0% - 100%)		
		Uncert:	+/-0.0764		+/-0.257						
0.010011.001		IPU:	+/-0.0765		+/-0.257						
QC120115313	12 LCS	12.8			12.8	nCi/a		100	(75%-125%)		
Americium-241		Iz.o			+/ 1.84	peng		100	(7570-12570)		
		TDL.			+/-2.70						
Curium-242		IFU.		п	-0.0328	nCi/a					
Curium-242		Uncert:		U	+/-0.0454	pens					
		TPU			+/-0.0457						
Curium-243/244	ı	15.5			14 3	nCi/g		92	(75%-125%)		
Cullum 2 15/21		Uncert:			+/-1.94	P0. 9			(1010 10070)		
		TPLE			+/-2.92						
OC120115312	29 MB	110.									
Americium-241				U	0.0471	pCi/g					
		Uncert:			+/-0.157						
		TPU:			+/-0.157						
Curium-242				U	-0.0469	pCi/g					
		Uncert:			+/-0.0459						
		TPU:			+/-0.0464						
Curium-243/244	l i			U	-0.00385	pCi/g					
		Uncert:			+/-0.210						
		TPU:			+/-0.210						
QC120115313	1 168340011	MS									
Americium-241		13.3 U	-0.000522		12.0	pCi/g		91	(75%-125%)		
		Uncert:	+/-0.0385		+/-1.38						
		TPU:	+/-0.0385		+/-2.08						
Curium-242		U	0.00	U	0.0427	pCi/g					
		Uncert:	+/-0.0756		+/-0.0837						
		TPU:	+/-0.0756		+/-0.0839	~ ~ ~					
Curium-243/244	ŀ	16.1 U	-0.0177		15.9	pCi/g		99	(75%-125%)		
		Uncert:	+/-0.0764		+/-1.58						
D . 1		TPU:	+/-0.0765		+/-2.61						
Batch	00009/										
QC120115313 Plutonium-238	4 168340011	DUP	-0.0155	U	0.0237	nCi/a	956		(0% - 100%) BXU	08/11/06 22:51	
		U		-		r~"6			(

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QC Summary

Workorder: 168404			Page 2 of 6								
Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 555697											
	Uncert:	+/-0.0215		+/-0.0465							
	TPU:	+/-0.0216		+/-0.0466							
Plutonium-239/240	U	0.0414	U	-0.0489	pCi/g	g 2410		(0% - 100%)			
	Uncert:	+/-0.0934		+/-0.124							
	TPU:	+/-0.0935		+/-0.124							
QC1201153136 LCS											
Plutonium-238			U	0.155	pCi/g	ç .		(75%-125%)			
	Uncert:			+/-0.141							
DI (000/040	TPU:			+/-0.142	0.1		00	(700/ 1000/)			
Plutonium-239/240	11.8			11.5	pCI/g	5	98	(/5%-125%)			
	Uncert:			+/-0.856							
OC1201162122 MR	IPU:			+/-1.32							
Plutonium-238			U	0.0552	nCi/e	,				08/11/0	6 22.50
Thuromani 250	Uncert:		U	+/-0.186	Pore	7				00/11/0	5 22.50
	TPU			+/-0.186							
Plutonium-239/240			U	-0.0978	pCi/g	<u>r</u>					
	Uncert:			+/-0.0892	1 0	•					
	TPU:			+/-0.0899							
QC1201153135 168340011 MS											
Plutonium-238	U	-0.0155	U	0.0539	pCi/g	5		(75%-125%)		08/11/0	6 22:51
	Uncert:	+/-0.0215		+/-0.112							
	TPU:	+/-0.0216		+/-0.112							
Plutonium-239/240	12.3 U	0.0414		10.3	pCi/g	5	84	(75%-125%)			
	Uncert:	+/-0.0934		+/-0.796							
D-+-1 655609	TPU:	+/-0.0935		+/-1.19							
Batch 555698											
QC1201153138 168340011 DUP					~						
Plutonium-241	U	7.28	U	10.1	pCı/g	; O		(0% - 100%)	BXLI	08/16/06	5 16:41
	Uncert:	+/-6.30		+/-6.39							
	TPU:	+/-6.35		+/-6.46							
QC1201153140 LCS Plutonium-241	137			145	nCi/a	,	106	(75%-125%)		08/16/06	5 17.14
Tutomum-241	Uncert:			+/-12.5	peng	,	100	(7570 12570)		00/10/00	, 17.14
				+/-19.9							
OC1201153137 MB	110.			17 19.9							
Plutonium-241			U	8.57	pCi/g	5				08/16/06	5 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	5 16:58
	Uncert:	+/-6.30		+/-12.4							
D . 1	TPU:	+/-6.35		+/-19.7							
Batch 55/85/											
QC1201158317 168404009 DUP				• • • =							
Americium-241	U	-0.0851	U	0.167	pCi/g	616		(0% - 100%)	BXLI	08/16/06	→ 09:49
	Uncert:	+/-0.136		+/-0.220							
	TPU:	+/-0.136	, ,	+/-0.221	~ ~ ~	2.47		(00/ 1000)			
Curium-242	U	-0.0253	U	0.241	pCi/g	247		(0% - 100%)			

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QC Summary

Wankandan	1 (0 (0)														
workorder:	168404						Page 3 of 6								
Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time			
Rad Alpha Spec															
Batch 55	7837														
		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%)	ŧ					
		Uncert:	+/-0.0542		+/-0.149										
		TPU:	+/-0.0545		+/-0.149										
QC1201158319	LCS														
Americium-241		24.5			25.4	pCi/g	3	104	(75%-125%)	J.					
		Uncert:			+/-2.47										
G : 040		TPU:		•••	+/-4.16	~									
Curium-242				U	0.0477	pCı/g	3								
		Uncert:			+/-0.127										
Curium 242/244		TPU:			+/-0.127			01	(750/ 1750/)						
Curium-243/244		29.7 Umanet			27.0	pC1/g	3	91	(75%-125%)						
		Uncert:			+/-2.34										
001201158316	MB	IPU:			7/-4.38										
Americium-241	MD			U	0 234	nCi/a	,								
		Uncert:		Ũ	+/-0.275	P0.5	>								
		TPU			+/-0.277										
Curium-242		110.		U	0.00	pCi/s	,								
		Uncert:			+/-0.152	r c	2								
		TPU:			+/-0.152										
Curium-243/244				U	-0.0551	pCi/g	Ţ								
		Uncert:			+/-0.0624		•								
		TPU:			+/-0.0628										
QC1201158318	168404009 MS														
Americium-241		26.4 U	-0.0851		29.1	pCi/g	ç	110	(75%-125%)						
		Uncert:	+/-0.136		+/-2.97										
		TPU:	+/-0.136		+/-5.01										
Curium-242		U	-0.0253	U	0.126	pCi/g	;								
		Uncert:	+/-0.0495		+/-0.247										
		TPU:	+/-0.0496		+/-0.248										
Curium-243/244		32.4 U	-0.0479		31.7	pCi/g	;	98	(75%-125%)						
		Uncert:	+/-0.0542		+/-3.12										
		TPU:	+/-0.0545		+/-5.39										
Rad Gas Flow	(250														
Balch 550	5550														
QC1201154645	168404003 DUP														
Strontium-90		U	-0.00343	U	-0.00637	pCi/g	. 0		(0% - 100%)	BXFI	08/14/06	6 08:33			
		Uncert:	+/-0.0203		+/-0.0152										
		TPU:	+/-0.0203		+/-0.0152										
QC1201154647	LCS	1.50			1.20	0.1		0.7	(758/ 1058/)						
Suonnum-90		Lincorti			1.30	pCi/g		83	(75%-125%)						
		The training the t			4-0.0303 4/_0.0991										
0C1201154644	MB	IPU:			17-0.000 I										
Strontium-90	MD			U	0.0176	nCi/o									
		Uncert:		2	+/-0.018	P B									
		TPU			+/-0.018										
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QC Summary

Workorder:	168404									Page 4 of 6	
Parmname			NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Gas Flow											
Batch 55	6350										
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 55	ation 4580										
OC1201150562	168340012	DUP									
Technetium-99	1003 10012	501	U Uncert: TPU	0.0338 +/-0.192 +/-0.192	U	0.266 +/-0.226 +/-0.226	pCi/g	0		(0% - 100%) EGD1	08/12/06 00:42
OC1201150564	LCS		110.			, 01220		,			
Technetium-99			13.1 Uncert: TPLI:			13.6 +/-0.496 +/-0.599	pCi/g		103	(75%-125%)	08/12/06 01:14
OC1201150561	MB		110.			., 0.577					
Technetium-99			Uncert:		U	0.0311 +/-0.177	pCi/g				08/12/06 00:26
0.0101100000	1 (02 (00) 2		TPU:			+/-0.177					
QC1201150563 Technetium-99	168340012	MS	13.0 U Uncert:	0.0338 +/-0.192		12.0 +/-0.523	pCi/g		92	(75%-125%)	08/12/06 00:58
Batch 55	4582		TPU:	+7-0.192		47-0.002					
		5.U.5									
QC1201150570	168340011	DUP		177	II	1.62	nCi/a	0		(0% - 100%) DEAT	08/09/06 15.47
Thoun			Uncert:	+/-8.20	Ŭ	+/-7.47	P0#6	Ū		(0/0 100/0) 21/11	00/09/00 15.42
			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					
001201160560	MD		TPU:			+/-14.1					
Tritium	MD			•	U	0.586	pCi/g				08/09/06 15:26
			Uncert:			+/-8.01	r8				
			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					
Batch 55-	4583		IFU.	17-0.20		17-12.5					
0.01001100574	1/0404003	DUB									
QC1201150574 Carbon-14	108404003	DUP	II	0.0937	U	0.0422	nCi/g	0		(0% - 100%) ATH2	08/10/06 01:39
			Uncert:	+/-0.0813		+/-0.075	r8			(,	
			TPU:	+/-0.0813		+/-0.0751					
QC1201150576	LCS									/===/	
Carbon-14			7.27			7.14	pCi/g		98	(75%-125%)	08/10/06 03:00
						+/-0.308 +/-0.520					
QC1201150573	MB		110.			11-0.520					

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QC Summary

Workorder: 1	68404									Page 5	of 6		
Parmname			NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid ScintillaBatch554	ition 1583												
Carbon-14					U	-0.0315	pCi/s	g					
			Uncert:			+/-0.0776							
			TPU:			+/-0.0776							
QC1201150575	168404003	MS											
Carbon-14			15.1 U	0.0937		13.8	pCi/į	g	92	(75%-125%)		08/10/0	6 02:43
			Uncert:	+/-0.0813		+/-1.00							
D . 1			TPU:	+/-0.0813		+/-1.03							
Batch 553	5722												
QC1201153223	168340012	DUP											
Iron-55			U	-26.5	U	5.83	pCi/g	g 0		(0% - 100%)	MXPI	08/12/0	6 20:54
			Uncert:	+/-65.1		+/-36.9							
			TPU:	+/-65.1		+/-36.9							
QC1201153225	LCS		~ • •										
Iron-55			641			660	pCı/g	g	103	(75%-125%)		08/12/0	6 21:27
			Uncert:			+/-56.2							
0.01001150000			TPU:			+/-67.2							
QC1201153222	MB				п	10.2	-C://					09/12/0	(20.20
11011-35			Uncort		0	10.2	pc//g	5				08/12/0	5 20:38
			TDL.			+/-39.0							
001201153224	168340012	MS	TPU:			-7-39.0							
Iron-55	100540012	WI5	717 U	-26.5		688	nCi/g	y	96	(75%-125%)		08/12/0	6 21.11
			Uncert:	+/-65.1		+/-60.2	Perc	2		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		00,12,0	
			TPU	+/-65.1		+/-71.6							
Batch 555	5723												
001201153227	168340012	קוות											
Nickel-63	100540012	DOI	П	3.79	U	6 68	nCi/e	, 0		(0% - 100%)	/ XP1	08/11/0	6 11.55
			Uncert [.]	+/-5 39	Ũ	+/-7 43	P08	-		(0/0 100/0)		00/11/0	511.55
			TPU	+/-5 40		+/-7 43							
OC1201153229	LCS		n o.	., 5.10									
Nickel-63			512			479	pCi/g	g	94	(75%-125%)		08/11/06	5 12:27
			Uncert:			+/-22.4				. ,			
			TPU:			+/-27.1							
QC1201153226	MB												
Nickel-63					U	15.7	pCi/g	Ş				08/11/06	5 11:38
			Uncert:			+/-9.92							
			TPU:			+/-9.93							
QC1201153228	168340012	MS											
Nickel-63			530 U	3.79		511	pCi/g	5	96	(75%-125%)		08/11/06	512:11
			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

Workor	rder:	168404							Page (őof 6		
Parmna	me		NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
>												
А	The TI	C is a suspected a	Idol-condensation produ	ict							2	
В	Target	analyte was detec	ted in the associated bla	ink								
BD	Results	are either below	the MDC or tracer reco	very is low								
С	Analyt	e has been confirm	ned by GC/MS analysis									
D	Results	are reported from	n a diluted aliquot of the	sample								
Н	Analyt	ical holding time	was exceeded									
J	Value i	is estimated										
N/A	Spike r	ecovery limits do	not apply. Sample con-	centration exceeds spike	concentra	tion by 4X	K or more					
R	Sample	e results are rejecte	ed									
U	Analyte	e was analyzed fo	r, but not detected above	e the MDL, MDA, or LO	DD.							
UI	Gamma	a SpectroscopyL	Uncertain identification									
х	Consul	t Case Narrative,	Data Summary package	, or Project Manager con	ncerning th	is qualifie	r					
Y	QC Sar	mples were not sp	iked with this compoun	d								
^	RPD of	f sample and dupl	icate evaluated using +/	-RL. Concentrations are	<5X the F	۲L						
h	Prepara	ation or preservati	on holding time was exe	ceeded							•	
N/A ind	icates the	at spike recovery	limits do not apply when	n sample concentration e	exceeds spi	ke conc. t	by a factor o	of 4 or more.				
** Indic	ates anal	yte is a surrogate	compound.		(D) :		1	· · · ·	. 1 .1			
sample i	elative P	than five tin	(RPD) obtained from tr nes (5X) the contract re	uired detection limit (R	(P) is evan	iated agai	ither the sar	ptence criteri	a wnen the cate value i	s		•
less than	1 5X the	RL, a control limi	it of +/- the RL is us	sed to evaluate the DUP	result.					~		
For PS, I	PSD, and	d SDILT results, t	he values listed are the	measured amounts, not f	inal concer	ntrations.						

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.

169404

RELEASE RECORD

Attachment 2b Split Sample Assessment Forms (2 Pages)

Split Sample Assessment Form

Survey Area 9106 #: 9106 Survey 0002 Survey Unit Name: Discl						l		
Sample Plan or WPIR#: 2006-021						SML #:	9106-0002-	014
Sample Description: Comparison of split samples collected from using gamma spectroscopy by an off-site vendor laboratory the comparison sample was <u>9106-0002-014FS</u> .						neasurement tandard sa	nt location <u>#(</u> ample was <u>}</u>	014 and analyzed 9106-0002-014F
		STANDAR	D			CC	OMPARISO	N
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	0.00E+00	2.22E-02	0	NONE -	1.13E-02	1.24E-02	N/A	N/A
Co-60	1.46E-03	1.07E-02	0	NONE -	-8.41E-03	1.25E-02	-5.76	N/A
Sr-90	-2.35E-03	8.00E-03	0	NONE -	-7.00E-03	7.25E-03	2.98	N/A
K-40	1.04E+01	5.15E-01	20	0.75 1.33	1.09E+01	5.40E-01	1.05	Y
Comments/C 60 & Sr-90 re	orrective A esults, guida	tions: In con	l isideration c ement range	of Cs-137, Co- s, obtained	Table is provided to show acceptance criteria used to assess split samples.			
from USNRC	Inspection ios less that	Procedure 84 1 4. therefore	4750, does 1 . a determin	not address ation of	Resolution Agreement			ment Range
acceptability	for such rat	ions cannot b	be made. Si	nce none of the	4	7	0.50	2.00
radionuclides	of concern	were in a con	mparable ra	nge, K-40 was	8	15	0.60	1.66
acceptable lev	vel of agree	ment, therefo	ore, no furth	er action is	51	200	0.75	1.55
warranted.					>	200	0.80	1.23
Performed By Ocl	y: Rem	hall	Date /	e: 0-23-06	Reviewed	By:	2	Date: $10/23/0E$

WPIR - Work Plan and Inspection Record

SML - Sample Measurement Location designation

Split Sample Assessment Form

Sample Plan or WPIR#: 2006-0021 SML #: 9106-0002-018 Sample Description: Comparison of split samples collected from sample measurement location #18 and a using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9106-0002-01 comparison sample was 9106-0002-018FS. STANDARD COMPARISON Radionuclide Activity Standard Resolution Agreement Nalue Error Ratio COMPARISON Comparison 2.09E-002 7 0.5 - 2 9.55E-02 2.89E-02 Activity Standard Comparison Acceptable Error Ratio Comparison 1.54E-02 5 0.5 - 2 9.55E-02 2.89E-02 1.18 Y Comparison Acceptable Error Comparison Activity Standard Comparison Acceptable Error Ratio 2.325E-01 3.19E-02 2.24 N Co-60 1.45E-01 2.09E-02 7 0.5 - 2 3.25E-01 3.19E-02 2.24 N Sr-90 7.58E-03 5.60E-03 1	Survey Jnit #: 0002 Survey Unit Name: Discharge Canal				
Sample Description: Comparison of split samples collected from sample measurement location #18 and a using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9106-0002-01 comparison sample was 9106-0002-018FS. COMPARISON STANDARD COMPARISON Radionuclide Activity Value Standard Resolution Agreement Range COMPARISON COMPARISON COMPARISON Comparison Acceptable Value Error Ratio Activity Standard Comparison Acceptable Cs-137 8.09E-02 1.54E-02 5 0.5 - 2 9.55E-02 2.89E-02 1.18 Y Co-60 1.45E-01 2.09E-02 7 0.5 - 2 3.25E-01 3.19E-02 2.24 N Sr-90 7.58E-03 5.60E-03 1 0.75 - 1.33 -2.42E-03 6.15E-03 -0.32 N/4 K-40 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y Comparison of the second secon					
Image: Note:	nalyzed <u>8F</u> , the				
Radionuclide Activity Standard Error Resolution Agreement Range Activity Standard Error Comparison Ratio Acceptabl Cs-137 $8.09E-02$ $1.54E-02$ 5 $0.5 - 2$ $9.55E-02$ $2.89E-02$ 1.18 Y Co-60 $1.45E-01$ $2.09E-02$ 7 $0.5 - 2$ $3.25E-01$ $3.19E-02$ 2.24 N Sr-90 $7.58E-03$ $5.60E-03$ 1 $0.75 - 1.33$ $-2.42E-03$ $6.15E-03$ -0.32 N// K-40 $1.04E+01$ $5.15E-01$ 20 $0.75 - 1.33$ $1.09E+01$ $5.40E-01$ 1.05 Y					
Cs-137 8.09E-02 1.54E-02 5 0.5 - 2 9.55E-02 2.89E-02 1.18 Y Co-60 1.45E-01 2.09E-02 7 0.5 - 2 3.25E-01 3.19E-02 2.24 N Sr-90 7.58E-03 5.60E-03 1 0.75 - 1.33 -2.42E-03 6.15E-03 -0.32 N/4 K-40 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y Image: Colored co	e (Y/N)				
Co-60 1.45E-01 2.09E-02 7 0.5 - 2 3.25E-01 3.19E-02 2.24 N Sr-90 7.58E-03 5.60E-03 1 0.75 - 1.33 -2.42E-03 6.15E-03 -0.32 N/4 K-40 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y M 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y M 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y M 1.04E+01 1.04E+01 1.04E+01 1.05 Y 1.05 Y M 1.04E+01 1.04E+01 1.04E+01 1.04E+01 1.04E+01 1.05 Y M 1.04E+01 1					
Sr-90 7.58E-03 5.60E-03 1 0.75 - 1.33 -2.42E-03 6.15E-03 -0.32 N/4 K-40 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y Image: Stress of the strest of the stress of the stress of the stress of the str					
K-40 1.04E+01 5.15E-01 20 0.75 1.33 1.09E+01 5.40E-01 1.05 Y					
Image: Second					
	. ,				
be present in the sample matrix in particulate form, one would to assess split samples.	la used				
processing of the sample-split aligot. In consideration of Sr-90 Resolution Agreement Rang	e				
results, guidance for agreement ranges, obtained from USNRC 4 7 0.50 2.00)				
Inspection Procedure 84750, does not address resolution ratios 8 15 0.60 1.60					
less than 4, therefore, a determination of acceptability for such 16 50 0.75 1.32 rations cannot be made. Since both Cs. 137 and K 40 were also					
found to be present at an acceptable level of agreement, no 51 200 0.80 1.25					
further action is warranted. > 200 0.85 1.18					
Performed By: Date: Reviewed By: Date:	/				
Och Thankall 10-23-06 Elfant 1/23/	76				

WPIR - Work Plan and Inspection Record

SML – Sample Measurement Location designation

RELEASE RECORD

Attachment 2c Preliminary Data Forms (1 Page)

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Preliminary Data Review Form - Samples for the Sign Test

Survey Unit: 9106-0002 Survey Unit Name: Discharge Canal

Classification:	2
Survey Media:	Soil
Type of Survey:	Final Status Survey
Type of Measurement:	Radionuclide Specific
Number of Measurements:	15
Operational DCGL:	1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60	Sr-90
Minimum Value:	0.00E+00	1.46E-03	-1.31E-02
Maximum Value:	3.81E-01	6.39E-01	2.14E-02
Mean:	1.36E-01	2.07E-01	4.24E-03
Median:	1.23E-01	1.45E-01	6.81E-03
Standard Deviation:	9.83E-02	1.83E-01	9.52E-03

	Ŕ	ADIONUCLI	DE CONCEN	TRATION (pCi	/g)	
NUMBER	Cs-137	Co-60	Sr-90	Identified?	Identified?	Identified?
9106-0002-002F	2.64E-02	2.13E-02	9.83E-03	Y	Y	Ν
9106-0002-004F	1.23E-01	1.19E-01	7.10E-03	Y	Y	N
9106-0002-005F	1.98E-01	2.88E-01	7.01E-03	Y	Y	N
9106-0002-007F	3.81E-01	6.39E-01	6.81E-03	Y	Y	Ν
9106-0002-008F	1.63E-01	3.70E-01	7.85E-03	Y	Y	Ν
9106-0002-009F	1.84E-01	2.31E-01	2.94E-03	Y	Y	N
9106-0002-010F	6.61E-02	2.38E-01	-1.06E-02	Y	Y	Ν
9106-0002-011F	2.47E-01	5.26E-01	1.95E-02	Y	Y	Y
9106-0002-012F	1.75E-01	1.18E-01	-4.47E-03	Y	Y	N
9106-0002-013F	2.43E-02	1.51E-01	-4.97E-04	Ν	Y	N
9106-0002-014F	0.00E+00	1.46E-03	-2.35E-03	Ν	N	Ν
9106-0002-015F	1.16E-01	5.07E-02	4.55E-03	Y	Y .	Ν
9106-0002-017F	9.30E-02	8.07E-02	2.14E-02	Y	Y	Y
9106-0002-018F	8.09E-02	1.45E-01	7.58E-03	Y	Y	N
9106-0002-019F	1.69E-01	1.21E-01	-1.31E-02	Y	Y	· N

Performed By: <u>Dal Randall</u> Date: <u>10-23-06</u> Independent Review: <u>Hand 55</u>, Sampest Date: <u>10/23/06</u>

RELEASE RECORD

Attachment 2d Graphical Representation of Data (6 Pages)



Cs-137	Rank	Percentage
0.00E+00	1	3 %
2.43E-02	2	10 %
2.64E-02	3	17 %
6.61E-02	4	23 %
8.09E-02	5	30 %
9.30E-02	6	37 %
1.16E-01	7	43 %
1.23E-01	8	50 %
1.63E-01	9	57 %
1.69E-01	10	63 %
1.75E-01	11	70 %
1.84E-01	12	77 %
1.98E-01	13	83 %
2.47E-01	14	90 %
3.81E-01	15	97 %

Prepared By: Och Rudold Reviewed By: Elfect E. E. Seagewr

Date: 10 - 23 - 06Date: 15/23/06

Quantile Plot For Cesium - 137



Co-60	Rank	Percentage
1.46E-03	1	3 %
2.13E-02	2	10 %
5.07E-02	3	17 %
8.07E-02	4	23 %
1.18E-01	5	30 %
1.19E-01	6	37 %
1.21E-01	7	43 %
1.45E-01	8	50 %
1.51E-01	9	57 %
2.31E-01	10	63 %
2.38E-01	11	70 %
2.88E-01	12	77 %
3.70E-01	13	83 %
5.26E-01	14	90 %
6.39E-01	15	97 %

Prepared By:

L Mandull La F.E. Serger Reviewed By:

Date: Date: 10723/06

Quantile Plot For Strontium - 90





Sr-90	Rank	Percentage
-1.31E-02	1	3 %
-1.06E-02	2	10 %
-4.47E-03	3	17 %
-2.35E-03	4	23 %
-4.97E-04	5	30 %
2.94E-03	6	37 %
4.55E-03	7	43 %
6.81E-03	8	50 %
7.01E-03	9	57 %
7.10E-03	10	63 %
7.58E-03	11	70 %
7.85E-03	12	77 %
9.83E-03	13	83 %
1.95E-02	14	90 %
2.14E-02	15	97 %

Prepared By: Ocle Randell Reviewed By:

Date: 10-23-06 Date: 10/23/06

Frequency Plot For Cobalt-60

Survey Unit: 9106-0002 Survey Unit Name: Discharge Canal



Upper End	Observation	Observation %
Value	Frequency	Frequency
0.10	4	27%
0.20	5	33%
0.30	3	20%
0.40	1	7%
0.50	1	7%
0.60	1	7%
Total	15	87%

Prepared By: Ocl Mandall

Date: 10-23-06

Reviewed By:

Date: 10/23/06

Health Physics Procedure

Frequency Plot For Cs - 137

Survey Unit: 9106-0002 Survey Unit Name: Discharge Canal



Upper End	Observation	Observation %
Value	Frequency	Frequency
0.10	6	40%
0.20	7	47%
0.30	1	7%
0.40	1	7%
Total	15	100%

Oal shendert Prepared By:

Date: 10-23-06

Reviewed By:

23/06 Date:

Frequency Plot For Sr - 90

Survey Unit: 9106-0002 Survey Unit Name: Discharge Canal



Upper End	Observation	Observation %
Value	Frequency	Frequency
0.00	5	33%
0.02	9	60%
0.04	1	7%
Total	15	100%

Oal Prubl Prepared By:

Date: 10-23-06

Reviewed By:

Date: 10/23/05

RELEASE RECORD

Attachment 2e Sign Test Calculation (1 Page) Health Physics Procedure

rvey Unit Number	9106-0002			····	
urvey Unit Name					
•	1				
WP&IR#:	Discharge Canal				
Classification	: 2	TYPE I (α error):0.05	TYPE I (b error	r):0.05
	Radionuclides:	Cs-137	Co-60	Sr-90	
Survey Des	ign DCGL (pCi/g):	5.38	2.59	0.62	
Results Cs-137	Results Co-60	Results Sr-90	Weighted Sum (W _s)	DCGL-Result	Sigr
2.64E-02	2.13E-02	2.13E-02	2.25E-02	9.78E-01	1
1.23E-01	1.19E-01	1.19E-01	7.56E-02	9.24E-01	1
1.98E-01	2.88E-01	2.88E-01	1.55E-01	8.45E-01	1
3.81E-01	6.39E-01	6.39E-01	3.24E-01	6.76E-01	1
1.63E-01	3.70E-01	3.70E-01	1.81E-01	8.19E-01	1
1.84E-01	2.31E-01	2.31E-01	1.26E-01	8.74E-01	1
6.61E-02	2.38E-01	2.38E-01	9.41E-02	9.06E-01	1
2.47E-01	5.26E-01	5.26E-01	2.68E-01	7.32E-01	1
1.75E-01	1.18E-01	1.18E-01	7.38E-02	9.26E-01	1
2.43E-02	1.51E-01	1.51E-01	6.23E-02	9.38E-01	1
0.00E+00	1.46E-03	1.46E-03	-1.67E-03	1.00E+00	1
1.16E-01	5.07E-02	5.07E-02	4.55E-02	9.55E-01	1
9.30E-02	8.07E-02	8.07E-02	6.88E-02	9.31E-01	1
8.09E-02	1.45E-01	1.45E-01	7.82E-02	9.22E-01	1
1.69E-01	1.21E-01	1.21E-01	6.57E-02	9.34E-01	1
	Number of Positi	ve Differences (S+)): 15		
Critical Value	11	Sum ou Unit	ti Maata Aaganta	nas Critorian	
Critical value:	11	Survey Unit	. Interis Accepta	nce Unterion	

Performed By: al mm for Sergeot ndependent Review:

Date:

Date: 10/23/06

Page 1 of 1

RELEASE RECORD

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



Assessment Summary

Site:	9106-0002		
Planner(s):	Dale Randall		
Survey Unit Name:	Discharge Canal		
Report Number:	1		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	Reject Null Hypothe	sis (Survev Unit PASS	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)	SrY-90 (pCi/g)
9106-0002-002F	S	0.03	0.02	0.01
9106-0002-004F	S	0.12	0.12	0.01
9106-0002-005F	S	0.2	0.29	0.01
9106-0002-007F	S ·	0.38	0.64	0.07
9106-0002-008F	S	0.16	0.37	0.01
9106-0002-009F	S	0.18	0.23	0
9106-0002-010F	S	0.07	0.24	-0.01
9106-0002-011F	S	0.25	0.53	0.02
9106-0002-012F	S	0.18	0.12	0
9106-0002-013F	S	0.02	0.15	0
9106-0002-014F	S	0	0	0
9106-0002-015F	S	0.12	0.05	0
9106-0002-017F	S	0.09	0.08	0.02
9106-0002-018F	S	0.08	0.14	0.01
9106-0002-019F	S	0.17	0.12	-0.01

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.

Type = "R" indicates re	eference area	sample.
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Sample Number	Туре	Sum-of-Ratios (SOR)
9106-0002-002F	S	0.04
9106-0002-004F	S	0.13
9106-0002-005F	S	0.23
9106-0002-007F	S	0.56
9106-0002-008F	S	0.24
9106-0002-009F	S	0.2
9106-0002-010F	S	0.1
9106-0002-011F	S	0.36
9106-0002-012F	S	0.15
9106-0002-013F	S	0.06
9106-0002-014F	S	0
9106-0002-015F	S	0.1
9106-0002-017F	S	0.12
9106-0002-018F	S S	0.11
9106-0002-019F	S	0.13

2



Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=15
Mean (SOR)	0.17	N/A	0.14
Median (SOR)	0.13	N/A	N/A
Std Dev (SOR)	0.14	N/A	0.07
High Value (SOR)	0.56	N/A	N/A
Low Value (SOR)	0.00	N/A	N/A