



Final Status Survey Final Report Phase VI

**Appendix A15
Survey Unit Release Record
9539-0001, ISFSI Haul Road**

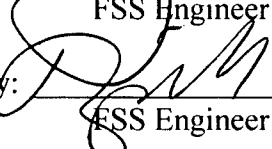
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CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
ISFSI HAUL ROAD (NORTHERN SECTION)
SURVEY UNIT 9539-0001

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9539-0001, which encompasses the northern portion of the access road to the Independent Spent Fuel Storage Installation (ISFSI) and the Southeast Landfill Area is designated as Final Status Survey (FSS) Class 2 and consists of approximately nine thousand three hundred thirty-two (9,332) square meters of open land and is located approximately one thousand, three hundred forty-four (1,344) feet from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1).

The survey unit is an open land area located along the east shore of the Discharge Canal from the non-protected area southeast grounds of the site to the ISFSI vehicle barrier. The survey area is a narrow strip of land encompassing the access road and 25 feet on both sides of the road. A minimal amount of brush and trees remain in the survey area. The area topography consists mostly of steep, rocky or vegetated hillsides. A majority of the trees have been cleared for the construction of the access road. The ISFSI access or "Haul" road crosses north to south through this survey unit.

The survey unit is bounded as follows: land Survey Unit 9522-0001 to the north (called north as oriented with the north to south flow of the Connecticut River), the Discharge Canal to the west, land Survey Unit 9539-0002 to the south, and land Survey Unit 9532 to the east.

Work activities to support the ISFSI access road construction have occurred in this survey unit. These activities included tree and stump removal, silt fence installation, soil removal, grading and rock blasting. Hillsides grading left some locations showing a steeper incline. Rock shelves and outcroppings were located along the hillside, especially in the east and south. There are occasional voids along the access road where the grading process has stripped away underlying rock.

The reference coordinates associated with this survey unit are E009 through E014 by S081 through S096 (refer to "*HNP License Termination Plan*" (LTP) 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 "*Classification Basis Summary*" conducted for Survey Unit 9539-0001 consisted of:

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

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- b) A review of the *"Initial Characterization Report"* and the *"Historic Site Assessment Supplement,"*
- c) Historic and current survey records review,
- d) Visual inspections and a "walk-down."

A review of the *"Initial and Supplemental Characterization Reports"* as well as the previous *"Classification Basis Summaries"* was performed. Survey Area 9539 was previously designated as Survey Area 9528. Survey Unit 9539-0001 is the northern portion of Survey Area 9539 and includes the former Survey Unit 9528-0002 and a portion of 9528-0003. Survey Area 9528 was initially designated as Class 3 during the development of the LTP. The source documents, the *"Connecticut Yankee Haddam Neck Characterization Report"* and *"Initial Classification for Survey Areas at Connecticut Yankee"*, were incorporated by reference in LTP revision 0.

The second source document justified a Class 2 designation for those areas for which there was historical evidence of contamination above the Derived Concentration Guideline Levels (DCGL), but for which recent surveys had shown that decontamination efforts had occurred and that the radiological conditions were expected to be below the DCGLs. Additional justification for a Class 2 designation based on survey and sampling data was provided as another reference to the LTP by the *"Haddam Neck Plant Historical Site Assessment Supplement"*.

The historical documents (e.g., the 10CFR50.75(g)(1) files) identify a number of events that may have impacted this survey unit. In the past, the public was granted access to this area for recreational purposes (e.g. hiking). Typical debris and litter (soda bottles, fishing line, etc.) were found in the area. From time to time, 55-gallon drum trash containers were positioned along the Canal Road to collect and control litter.

In December of 2001, scan surveys in an area along the road indicated the possible deposition of radioactive material in an unauthorized location (CR 01-0490). In March of 2002, investigative soil sampling was performed in the area where elevated scan results were observed. The soil sample results identified low-level plant-related radioactive material (Co-60). The presence of Co-60 was not expected as this area was previously identified as Survey Unit 9528-000, a Class 3 area (CR 02-0125).

Although measurement results were very low relative to the DCGL, soil containing the Cobalt-60 were removed from the area as a prudent measure. Approximately twenty-five (25) cubic meters of soil was removed for disposal as waste. Post excavation soil sample analyses results did not identify any remaining residual activity. Based on the findings of the survey and the subsequent remediation, Survey Unit 9528-0000 was reclassified as a Class 2 open land area. In accordance with the survey unit size limitations in the License Termination Plan (LTP), Survey Unit 9528-0000 was subdivided into three (3) new survey units designated as 9528-0002, 9528-0003 and 9528-0004.

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Low-level licensed material from the plant and the Offsite Material Recovery Program (OMRP) utilized the canal roads as a route to the Southeast Landfill and Material Storage areas. Sample data associated with the OMRP identified two (2) Hard-to-Detect (HTD) radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). However, the reported concentrations of Ni-63 and Fe-55 were a very low fraction of the applicable Base Case Derived Concentration Guideline Level (DCGL) for soil (<1%). Other radionuclides were not expected to be present in any significant percentage of their DCGL.

In July of 2002, Survey Units 9528-0002, 9528-0003 and 9528-0004 were subjected to FSS under Work Plan and Inspection Record (WP&IR) 24265-000-GEN-0002-00104-000. FSS consisted of surface soil samples and scan measurements. Scan surveys were performed with an Eberline E-600 using a SPA-3, 2"x2" sodium iodide detector.

Fifteen (15) surface soil samples were collected from each of the three (3) survey units contained within Survey Area 9528. During scanning, several areas were identified with slightly elevated readings, which prompted the collection of additional investigation soil samples from these areas. All samples were collected and analyzed by gamma spectroscopy by an approved off-site laboratory. Nine (9) of the forty-nine (49) total samples collected were analyzed for "Hard-to-Detect" (HTD) radionuclides. Cs-137 and Co-60 were the primary radionuclides detected in the sample population. No HTD radionuclides were positively identified. FSS results from 2002 demonstrated that all three (3) survey units were acceptable for unrestricted release. The sample analysis results from the 2002 FSS survey are provided in Table 1.

Table 1 – Sample Analysis Results from 2002 FSS Soil Samples

	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value :	-2.02E-02	-1.37E+00
Maximum Value :	1.20E+00	6.31E-01
Mean :	2.59E-01	7.84E-03
Median :	1.04E-01	3.38E-03
Standard Deviation :	3.05E-01	2.19E-01

In 2006, a decision was made to reuse milled asphalt media by using the material to grade, build and repair the ISFSI haul road. The asphalt was a byproduct of demolition activities in various areas of the site. The material had been stock-piled awaiting disposal. Prior to introducing the material into the survey area, volumetric samples were taken and analyzed by gamma spectroscopy. Low levels of Cs-137 and Co-60 were detected. However, as the origin of the material was from impacted areas and the volumetric samples were not completely

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representative of all the material that was deposited, the previously performed FSS in Survey Area 9528 was invalidated. Survey Area 9528 was subsequently renamed as Survey Area 9539 to support the resurvey.

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

This survey area is affected by existing groundwater (reference CY memo ISC 06-024) which will be a source of dose from residual radioactivity, as discussed in Section 3 under the Data Quality Objectives.

Based upon a review of the historical information and the results of the Characterization Survey data, it was concluded that there was a low probability for residual radioactivity in concentrations greater than the DCGLs, justifying a final survey unit classification of Class 2 (refer to Section 3).

3. DATA QUALITY OBJECTIVES (DQO)

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

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would indicate that residual activity within the survey unit does not exceed the release criteria. Therefore, the survey unit would satisfy the primary objective of the FSS plan.

The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9539-0001 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of DCGLs. The DCGLs represent average levels of radioactivity above background levels and are 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), existing groundwater radioactivity and future groundwater radioactivity that will be contributed by building basements and footings.

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

Equation 1

$$H_{\text{Total}} = H_{\text{Soil}} + H_{\text{ExistingGW}} + H_{\text{FutureGW}}$$

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 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.

CY memo ISC 06-024 addresses the impact of existing and future groundwater on specific survey areas at CY. Survey Area 9539 is not specifically addressed by this reference. However, CY memo ISC 06-024 does state that Survey Area 9528 is affected by existing groundwater and 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.

Since Survey Area 9528 became Survey Area 9539, the dose contribution from existing and future groundwater will impact Survey Area 9539 in the same manner as it did Survey Area 9528. Therefore the dose contribution from existing groundwater in Survey Unit 9539 is bounded by two (2) mrem/yr TEDE and the dose contribution from future groundwater, the third dose component, is zero (0) mrem/yr TEDE.

Equation 2

$$19 \text{ mrem/yr}_{\text{Total}} = 17 \text{ mrem/yr}_{\text{Soil}} + 2 \text{ mrem/yr}_{\text{Existing GW}} + 0 \text{ mrem/yr}_{\text{FutureGW}}$$

The allowable dose for soil in this survey unit is seventeen (17) 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 (DCGL_{op}), and has been established for the radionuclides of concern as provided in Table 2.

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Table 2 – Radionuclide Specific Base Case Soil DCGLs, Operational DCGLs and Required Minimum Detectable Concentrations (MDCs)

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pC/g) ⁽²⁾	Operational DCGL (pC/g) ⁽³⁾	Required MDC (pC/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
Tc-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
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00
Pu-241	8.70E+02	5.92E+02	3.48E+01
Cm-243/244	2.90E+01	1.97E+01	1.16E+00

- (1) Bold indicates those radionuclides considered Hard to Detect (HTD)
- (2) The Base Case Soil DCGL(s) are specified by the LTP in Chapter 6 and are equivalent to twenty-five (25) mrem/yr TEDE
- (3) The Operational DCGL is equivalent to achieving seventeen (17) mrem/yr TEDE
- (4) The required MDC is equivalent to achieving one (1) mrem/yr TEDE
- (5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed

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Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Soil samples were collected in 2002 as part of the previous FSS to establish the radiological condition of Survey Unit 9539-0001. Cs-137 and Co-60 were the only two (2) gamma emitting radionuclides reported in concentrations with the potential for exceeding the screening criteria. No HTD radionuclides were positively identified. The previous FSS data were used for this survey design and are provided in Table 1.

Instrument DQOs included a verification of the ability of the survey instrument to detect the radiation(s) of interest relative to the DCGL. Survey instrument response checks were required prior to issue and after the instrument had been used. Control and accountability of survey instruments was required to assure the quality and prevent the loss of data.

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 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*". The FSS plan uses an integrated sample design that combines scanning surveys and sampling which can be either random or biased.

The DQO process determined that both Cs-137 and Co-60 would be the radionuclides of concern in Survey Unit 9539-0001 (refer to Section 3). The characterization survey did not identify any HTD radionuclides of concern for this survey unit. Subsequently, surrogate DCGLs were not required for this survey unit via screening under LTP Section 5.4.7.2, "*Gross Activity DCGLs*". Other radionuclides that were positively identified in concentrations greater than the screening criteria during the performance of this FSS would be evaluated to ensure adequate survey design. Radionuclide screening or de-selection is a process where the dose contribution from an individual radionuclide or aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates.

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.

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

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "*Determination of the Number of Surface Samples for Final Status Survey.*" The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 0.8 to maintain the relative shift (Δ/σ) in the range of 1 and 3. The resulting relative shift was 2.00. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10CFR20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. The survey design specified fifteen (15) surface soil samples for non-parametric statistical testing. Based upon a review of the historical information and Characterization Survey data, the acquisition of additional judgmental surface soil samples from within this survey unit was deemed unnecessary.

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.

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
9539-0001-001F	236053.33	669498.22
9539-0001-002F	235977.12	669630.22
9539-0001-003F	235900.91	669762.21
9539-0001-004F	235900.91	670202.21
9539-0001-005F	235900.91	670290.21
9539-0001-006F	235900.91	670378.21

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Table 3 - (continued)

Designation	Northing	Easting
9539-0001-007F	235900.91	670466.20
9539-0001-008F	235900.91	670554.20
9539-0001-009F	235824.70	669894.21
9539-0001-010F	235824.70	669982.21
9539-0001-011F	235824.70	670686.20
9539-0001-012F	235824.70	670774.20
9520-0001-013F	235748.49	670906.20
9539-0001-014F	235748.49	670994.20
9539-0001-015F	235672.28	671126.19

Procedure RPM 5.1-11 specifies that 5% of the samples are required to be selected for HTD analysis. Two (2) soil samples, or about 10% of the number of samples that would be used for non-parametric statistical testing were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RANDBETWEEN" function. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in the LTP, Table 2-12, "*Radionuclides Potentially Present at Haddam Neck Plant*" and as provided 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 one (1) soil sample for "split sample" analysis by the off-site laboratory. This location was selected randomly using the Microsoft Excel "RANDBETWEEN" function.

The LTP specifies a required scanning coverage of 10% to 100% for outdoor Class 2 areas. The fraction of scanning coverage was determined during the DQO process with the total amount and location(s) based on the likelihood of finding elevated activity during FSS. Based on the historical site assessment, the characterization data available, and the use of this survey unit, it was determined that scanning was required in six (6) separate areas. The total surface area to be scanned was approximately 25% of the survey unit. A map of the scan grid locations is provided in Attachment 1.

For this Class 2 survey unit, the "Investigation Level" for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8. Table 4 provides a synopsis of the survey design.

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Table 4 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Survey Unit Land Area	9,332 m ²	Based on AutoCAD-LT
Number of Measurements	15 (15 systematic grid)	Type 1 and Type 2 errors were 0.05, sigma was 0.10 pCi/g, the LBGR was set at 0.8 to maintain Relative Shift in the range of 1 and 3
Grid Spacing	26.85 m	Based on triangular grid
Operational DCGL	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	Administratively set to achieve seventeen (17) mrem/yr TEDE ⁽¹⁾
Soil Investigation Level	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 2 survey unit
Scan Survey Area Coverage	Approximately 25% of the area	The LTP requires >10% area coverage for Class 2 survey units
Scan Investigation Level	Detectable over background	Administratively set to achieve seventeen (17) mrem/yr TEDE ⁽¹⁾

(1) The allowable dose for soil in this survey unit is seventeen (17) mrem/yr TEDE as the bounding dose from existing and future groundwater has been established based on field data (reference CY memo ISC 06-024)

5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0048. The WP&IR package included a detailed FSS plan, 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.

Six (6) scan areas were established that constituted approximately 25% of the surface area of Survey Unit 9539-0001. Grid lines, one meter wide, were painted on the ground of the scan area. A background survey was performed around the survey unit and it was determined that, using an Eberline E-600 with a SPA-3 sodium iodide detector, background ranged from 4,290 counts per minute (cpm) up to 9,620 cpm.

The scan areas were established and scanned for elevated readings (see Attachment 2 for all scan results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to

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the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 25% of the survey unit was scanned.

Measurement locations were identified in North American Datum (NAD) 1927 coordinates using GPS coordinates; sample locations were identified and marked with a surveyor's flag or paint for identification. At each sample location, a one (1) meter radius around the sample flag or paint mark was scanned for elevated radiation levels.

Fifteen (15) surface soil samples were collected and packaged in accordance with Haddam Neck Plant (HNP) Procedure RPM 5.1-3, "*Collection of Sample Media for Final Status Survey*" and FSS design. Samples were controlled, transported, stored, and transferred to the off-site laboratory using Chain-of-Custody (COC) protocol in accordance with Procedure RPM 5.1-5, "*Chain of Custody for Final Status Survey Samples.*"

Two (2) samples (9539-0001-001F and 9539-0001-007F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of one (1) sample (9539-0001-003F) for "split sample" analysis.

6. SURVEY RESULTS

All field survey activities were conducted between January 3, 2007 and January 9, 2007.

The sample locations identified in the FSS plan were scanned over approximately a one (1) meter radius for elevated radiation levels. Table 5 provides an overview of the scan results for sample measurement locations. Scan results for the entire survey unit are provided in Attachment 2.

Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾⁽²⁾ (kcpm)	> Action Level
1	5.9	6.8	NO
2	5.4	6.5	NO
3	7.4	8.8	NO
4	5.8	7.2	NO
5	5.7	7.3	NO
6	6.9	6.5	YES
7	6.8	8.4	NO
8	10.1	10.8	NO

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Table 5 - (continued)

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾⁽²⁾ (kcpm)	> Action Level
9	5.3	6.6	NO
10	5.2	7.1	NO
11	6.3	8.5	NO
12	10.0	10.1	NO
13	9.4	9.7	NO
14	11.5	11.4	YES
15	7.7	8.5	NO

- (1) The action level is based on a measurement above ambient background in accordance with the FSS plan
- (2) The FSS plan requires movement of the sample measurement location to the area within the 1 meter radius yielding the response above the action level. Sample locations 9539-0001-006F and 9539-0001-014F were moved accordingly.

The scan areas, that comprised approximately 25% of the total surface area for the survey unit, were scanned for elevated radiation levels. The areas were scanned in accordance with the FSS plan on January 4, 2007 through January 9, 2007. Several elevated measurement locations were identified during scanning.

Table 6 provides an overview of the scan area survey. Complete scan results are provided in Attachment 2.

Table 6 - Scan Area Results

Scan Area	Scan Strips	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification	Investigation Sample
1	1-12	6.00	6.30	None	None
2	1-13	5.75	7.51	None	None
3	1-13	10.50	6.94	Log # 75 from download # 010407-1110 afternoon	9539-0001-016I
				Log # 76 from download # 010407-1110 afternoon	9539-0001-017I

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Table 6 - (continued)

Scan Area	Scan Strips	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification	Investigation Sample
4	1-11	5.44	6.36	None	None
5	1-11	12.70	8.79	Log #24 from download # 010907-1114 afternoon	9539-0001-018I
				Log #26 from download # 010907-1114 afternoon	9539-0001-019I
				Log #02 from download # 010907-1114 afternoon	9539-0001-020I
6	1-11	9.36	7.61	Log #02 from download # 010507-1115 afternoon	9539-0001-021I

(1) The action level is based on a measurement above ambient background

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing, the associated field split and the six (6) investigation samples using gamma spectroscopy. Gamma spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). However, Cs-137 and Co-60 were the only gamma-emitting radionuclides reported in concentrations exceeding the de-selection criteria.

Cs-137 was identified in ten (10) and Co-60 was identified in two (2) of the fifteen (15) samples collected for non-parametric statistical testing. The mean of the gamma spectroscopic analysis results for the sample population indicated that Cs-137 was present at levels lower than the concentrations of Cs-137 found in soil at off-site locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063. A summary of the fifteen (15) samples collected for non-parametric statistical testing results is provided in Table 7.

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Table 7 - Summary of Gamma Spectroscopy Results for Surface Soil Samples Comprising the Statistical Sample Population

Sample Number	Cs-137 pCi/g	Co-60 pCi/g
9539-0001-001F	1.67E-01	-2.35E-03
9539-0001-002F	-2.12E-03	-8.86E-03
9539-0001-003F	1.74E-01	-4.43E-03
9539-0001-004F	3.66E-02	2.81E-02
9539-0001-005F	-3.46E-03	9.64E-03
9539-0001-006F	-3.05E-04	4.13E-03
9539-0001-007F	5.79E-02	1.76E-02
9539-0001-008F	1.34E-01	1.65E-02
9539-0001-009F	9.71E-02	4.59E-02
9539-0001-010F	3.76E-02	4.25E-03
9539-0001-011F	-4.03E-03	-4.03E-03
9539-0001-012F	2.34E-01	-4.33E-03
9539-0001-013F	0.00E+00	5.10E-03
9539-0001-014F	7.73E-02	1.56E-02
9539-0001-015F	3.06E-02	8.23E-03

The off-site laboratory also processed two (2) samples for HTD analysis as required by the sample plan. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC.

Tc-99 was positively identified (i.e., a result greater than two (2) standard deviations uncertainty) in one (1) of the two (2) samples analyzed for HTD radionuclides. In accordance with LTP Section 5.4.7.2, "*Gross Activity DCGLs*", the criteria for de-selection of a radionuclide is a concentration that is less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the Operational DCGLs for aggregates. For Tc-99, the Operational DCGL is 8.57 pCi/g to achieve a TEDE of seventeen (17) mrem/yr. The positive analytical result for Tc-99 equated to 4.5% of the Operational DCGL. Subsequently, Tc-99 was deselected as a radionuclide of concern for this survey unit.

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The “sum-of-fractions” or “unity rule” is the mathematical test used to evaluate compliance with radiological criteria for license termination when more than one radionuclide has been determined to be potentially present. The unity rule is:

Equation 3

$$\frac{C_1}{DCGL_1} + \frac{C_2}{DCGL_2} + \dots + \frac{C_n}{DCGL_n} \leq 1$$

Where: C_n = concentration of radionuclide n and
 $DCGL_n$ = DCGL of radionuclide n .

The results of the unity rule calculation for the radionuclides of concern in the statistical sample population for Survey Unit 9539-0001 are provided in Table 8 below.

**Table 8 – Results of Unity Calculation for Surface Soil Samples
Comprising the Statistical Sample Population**

Sample Number	Fraction of the Operational DCGL ⁽¹⁾⁽²⁾		Unity Fraction
	Cs-137	Co-60	
9539-0001-001F	0.03	-	0.03
9539-0001-002F	-	-	-
9539-0001-003F	0.03	-	0.03
9539-0001-004F	0.01	0.01	0.02
9539-0001-005F	-	-	-
9539-0001-006F	-	-	-
9539-0001-007F	0.01	-	0.01
9539-0001-008F	0.02	-	0.02
9539-0001-009F	0.02	0.02	0.04
9539-0001-010F	0.01	-	0.01
9539-0001-011F	-	-	-
9539-0001-012F	0.04	-	0.04
9539-0001-013F	-	-	-
9539-0001-014F	0.01	-	0.01
9539-0001-015F	0.01	-	0.01

(1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 to achieve seventeen (17) mrem/yr TEDE respectively.

(2) -indicates that the radionuclide was not positively detected in the sample

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7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. One (1) sample location was selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*". There was acceptable agreement between the field split results at location 9539-0001-003F.

The sample analysis vendor, General Engineering Laboratories, LLC, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachment 4 for data and data quality analysis results.

8. INVESTIGATIONS AND RESULTS

Six (6) investigative samples were collected from scan area 3, scan area 5 and scan area 6 at locations exhibiting elevated scan readings. The samples are denoted as shown in Table 6, with the sample results shown in Table 9 below.

Table 9 - Investigative Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Unity Fraction ⁽¹⁾⁽²⁾
9539-0001-016I	2.44E-02	5.30E-03	-
9539-0001-017I	5.28E-02	-3.08E-03	0.01
9539-0001-018I	3.88E-02	-2.87E-03	0.01
9539-0001-019I	1.15E-01	-1.31E-02	0.02
9539-0001-020I	2.39E-01	6.70E-03	0.04
9539-0001-021I	1.78E-02	9.21E-04	0.00

(1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 to achieve seventeen (17) mrem/yr TEDE respectively.

(2) - indicates that the radionuclide was not positively detected in the sample

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.

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10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

No changes were made to the FSS plan for this survey unit.

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 evaluation of the Sign Test results demonstrates that the survey unit passes the unrestricted release criteria, thus, the null hypothesis is rejected.

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

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The mean and median values are well below the Operational DCGL. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs. The basic statistical quantities for the statistical sample population are provided below in Table 10.

Table 10 – Basic Statistical Quantities for Cs-137 and Co-60 from the Final Status Survey

	Cs-137 pCi/g	Co-60 pCi/g
DCGL _{op} :	5.38E+00	2.59E+00
Minimum Value:	-4.03E-03	-8.86E-03
Maximum Value:	2.34E-01	4.59E-02
Mean:	6.91E-02	8.74E-03
Median:	3.76E-02	5.10E-03
Standard Deviation:	7.64E-02	1.45E-02

For Cs-137, the range of the data, about three (3) standard deviations, was not a particularly large variation considering that the levels were essentially at existing environmental levels where such variation is to be expected. The difference between the mean and median was about 41% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot indicates positive skewness as confirmed by the calculated skew of 0.91 for Cs-137.

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Co-60, although included in the FSS plan for compliance purposes, was positively identified in only two (2) of the fifteen (15) samples collected for non-parametric statistical testing. Assessment of the basic statistical quantities and graphical representation of Co-60 was not considered useful given the limited number of data points to represent the distribution.

All data, assessments, and graphical representations are provided in Attachment 4.

12. ANOMALIES

No anomalies were noted.

13. CONCLUSION

Survey Unit 9539-0001 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

All identified radionuclides of concern were used for statistical testing to determine the adequacy of the survey unit for FSS.

The sample data passed the Sign Test. The null hypothesis was rejected. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit is properly designated as Class 2.

The dose contribution from soil is 0.276 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

This survey area is affected by existing groundwater (reference CY memo ISC 06-024); therefore the dose contribution from existing groundwater is bounded at two (2) mrem/yr TEDE.

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

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 2.276 mrem/yr TEDE. Therefore, Survey Unit 9539-0001 is acceptable for unrestricted release.

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14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

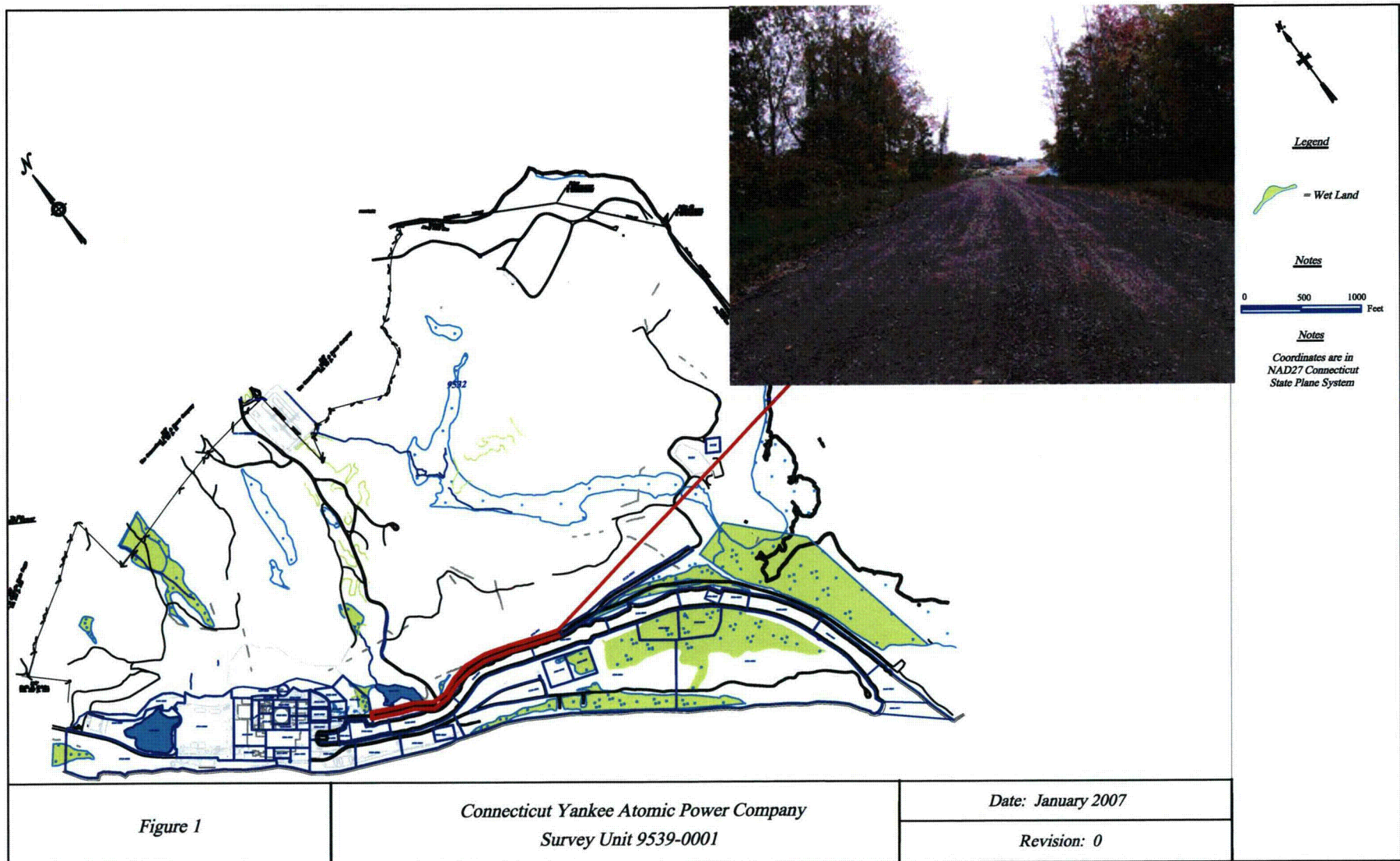
14.4 Attachment 4 – DQA Results

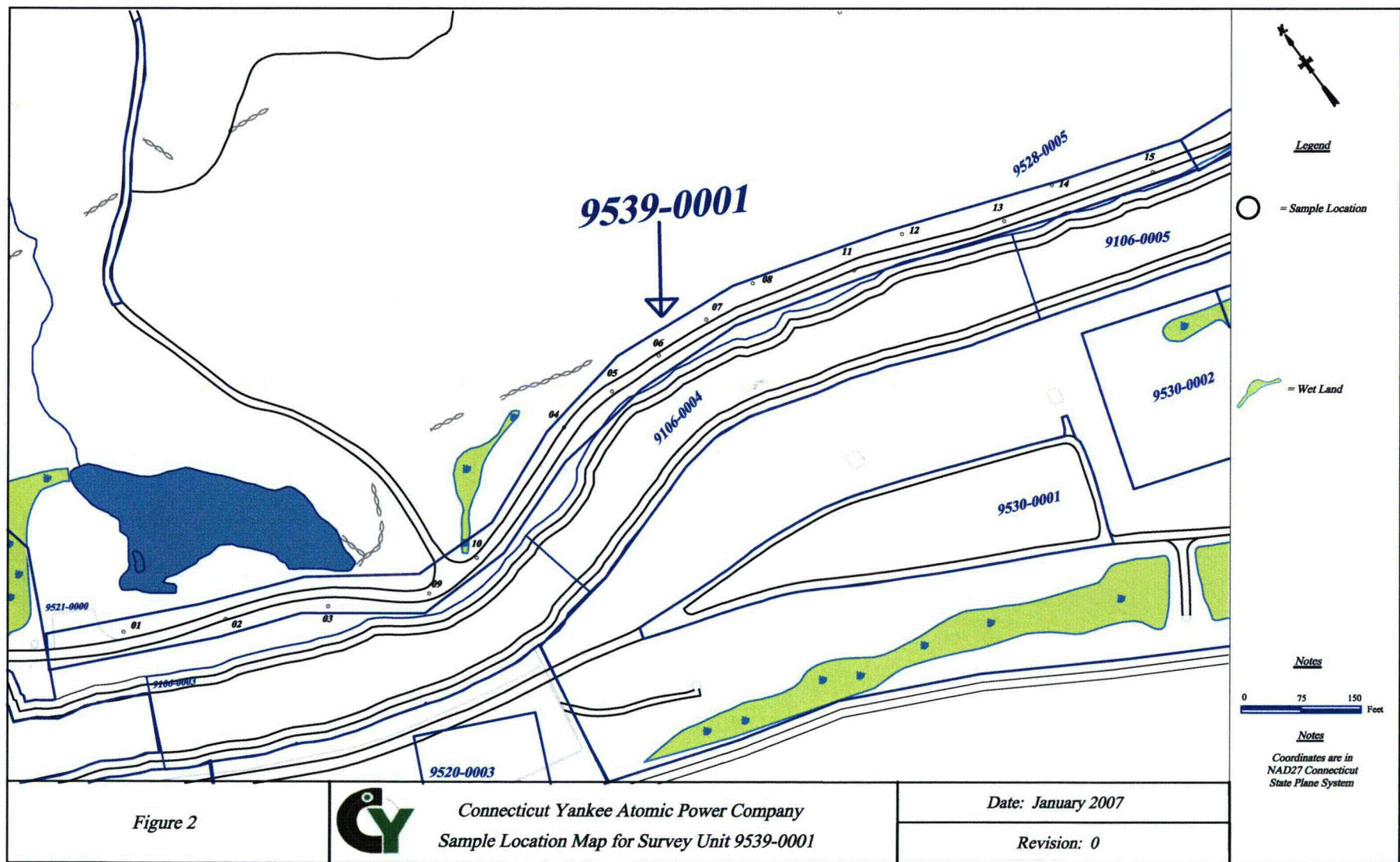
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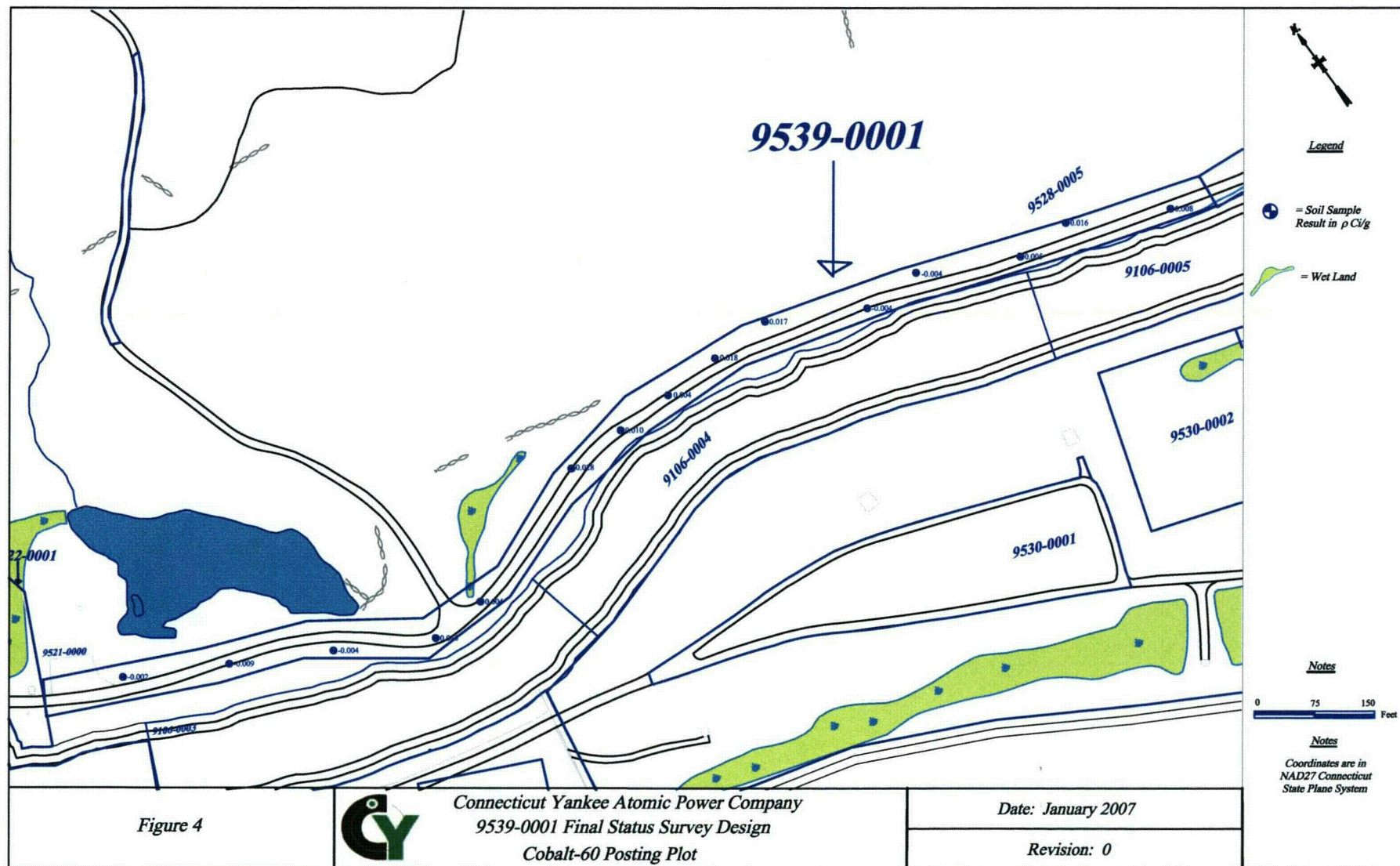
SURVEY UNIT 9539-0001

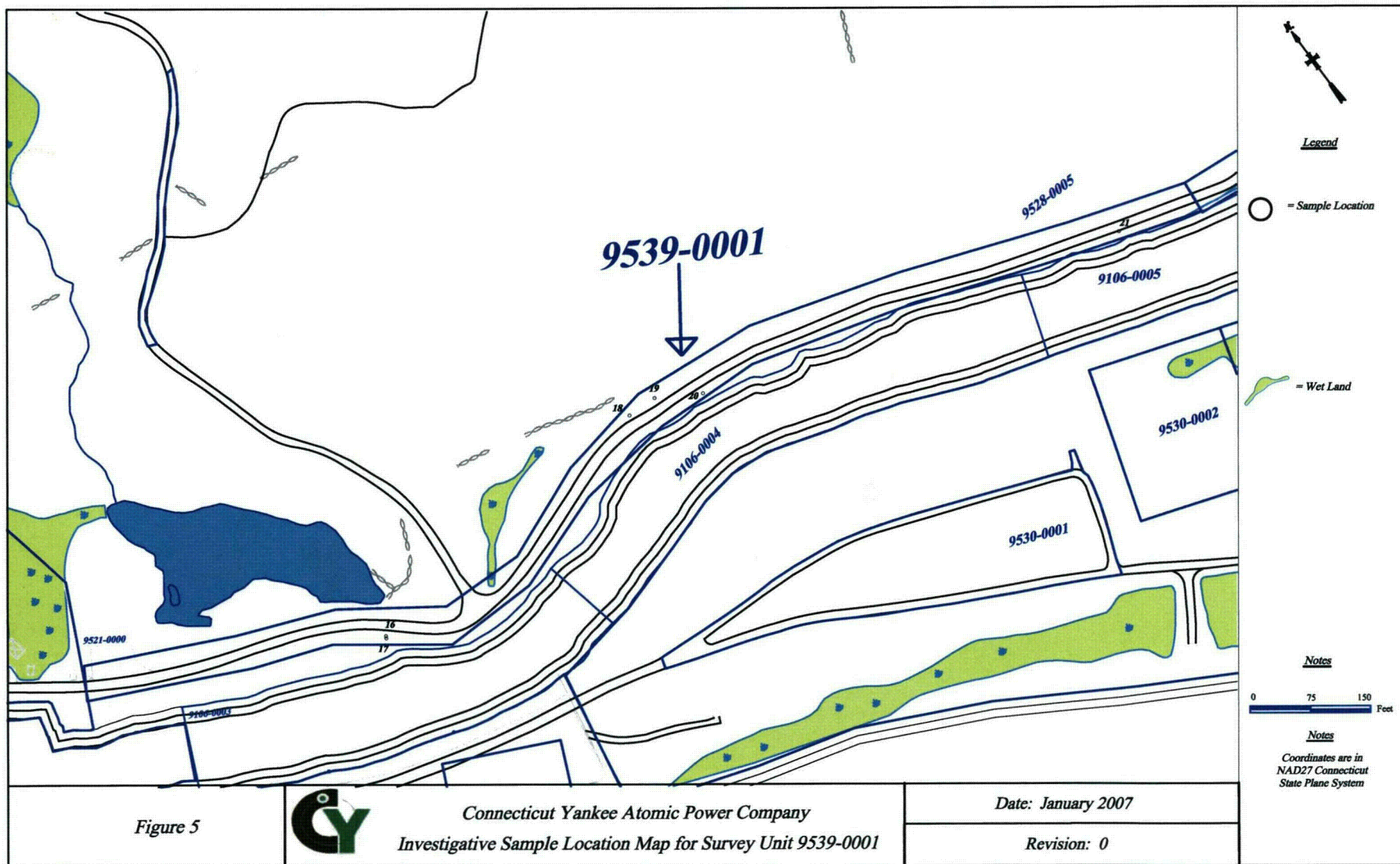
RELEASE RECORD

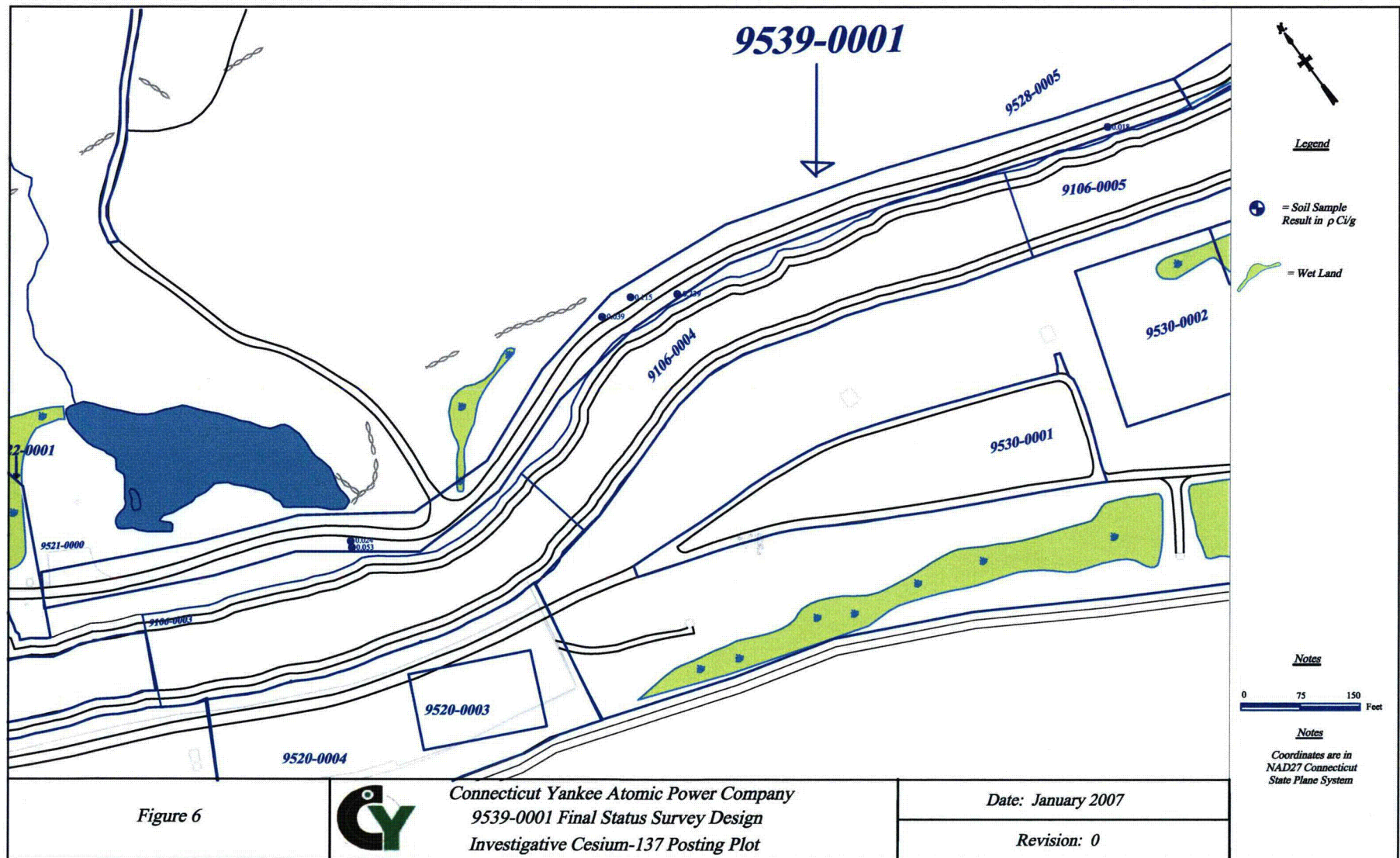
ATTACHMENT 1 (FIGURES)

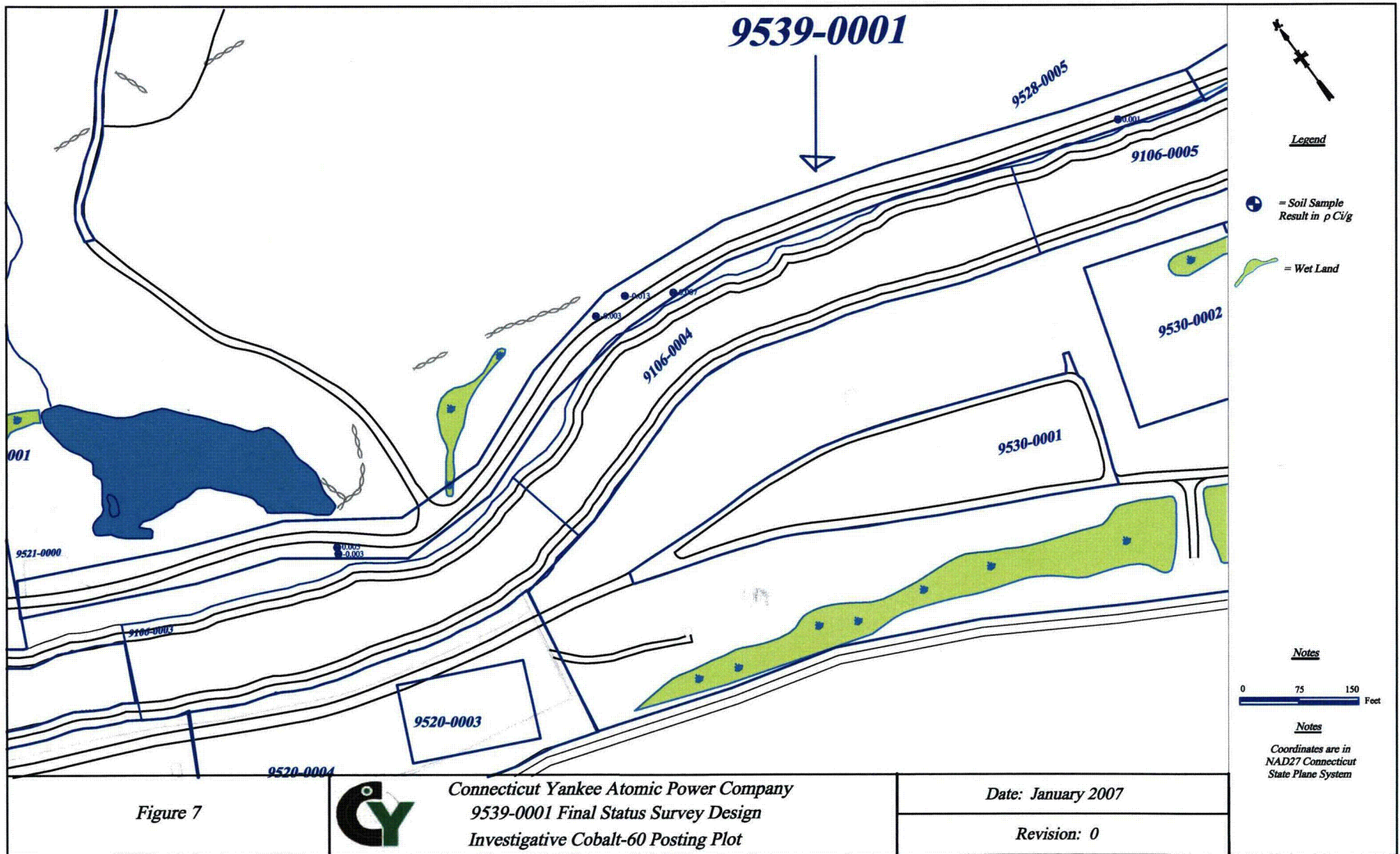












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ATTACHMENT 2 (SCAN RESULTS)

Survey Unit 9539-0001
Scan Area #01
Strip Scan Results

Scan Area	Strip Number	Type Reading	Log Number	Log Date	Log Time	Reading (cpm)	Action Level	>Action Level	E-600 S/N	Probe S/N
1	1	BC	1	1/4/2007	10:06:00	4.29E+03			1110	1010
		SC	2	1/4/2007	10:07:00	4.74E+03	5.23E+03	-	1110	1010
1	2	BC	3	1/4/2007	10:07:00	6.10E+03			1110	1010
		SC	4	1/4/2007	10:09:00	4.97E+03	7.22E+03	-	1110	1010
1	3	BC	5	1/4/2007	10:10:00	4.43E+03			1110	1010
		SC	7	1/4/2007	10:12:00	4.88E+03	5.38E+03	-	1110	1010
1	4	BC	8	1/4/2007	10:13:00	6.09E+03			1110	1010
		SC	9	1/4/2007	10:15:00	5.65E+03	7.20E+03	-	1110	1010
1	5	BC	10	1/4/2007	10:18:00	5.02E+03			1110	1010
		SC	11	1/4/2007	10:19:00	4.67E+03	6.03E+03	-	1110	1010
1	6	BC	12	1/4/2007	10:20:00	5.26E+03			1110	1010
		SC	13	1/4/2007	10:21:00	6.00E+03	6.30E+03	-	1110	1010
1	7	BC	14	1/4/2007	10:21:00	6.37E+03			1110	1010
		SC	15	1/4/2007	10:22:00	5.41E+03	7.51E+03	-	1110	1010
1	8	BC	16	1/4/2007	10:22:00	4.61E+03			1110	1010
		SC	17	1/4/2007	10:24:00	4.51E+03	5.58E+03	-	1110	1010
1	9	BC	18	1/4/2007	10:24:00	4.96E+03			1110	1010
		SC	19	1/4/2007	10:25:00	5.18E+03	5.97E+03	-	1110	1010
1	10	BC	20	1/4/2007	10:25:00	5.28E+03			1110	1010
		SC	21	1/4/2007	10:26:00	5.97E+03	6.32E+03	-	1110	1010
1	11	BC	22	1/4/2007	10:26:00	5.94E+03			1110	1010
		SC	23	1/4/2007	10:27:00	5.53E+03	7.04E+03	-	1110	1010
1	12	BC	24	1/4/2007	10:27:00	4.97E+03			1110	1010
		SC	25	1/4/2007	10:28:00	4.47E+03	5.98E+03	-	1110	1010

Survey Unit 9539-0001
Scan Area #02
Strip Scan Results

Scan Area	Strip Number	Type Reading	Log Number	Log Date	Log Time	Reading (cpm)	Action Level	>Action Level	E-600 S/N	Probe S/N
2	1	BC	26	1/4/2007	10:36:00	5.17E+03			1110	1010
		SC	27	1/4/2007	10:36:00	5.73E+03	6.20E+03	-	1110	1010
2	2	BC	28	1/4/2007	10:36:00	6.37E+03			1110	1010
		SC	29	1/4/2007	10:37:00	5.75E+03	7.51E+03	-	1110	1010
2	3	BC	30	1/4/2007	10:38:00	5.83E+03			1110	1010
		SC	31	1/4/2007	10:38:00	5.41E+03	6.92E+03	-	1110	1010
2	4	BC	32	1/4/2007	10:38:00	5.04E+03			1110	1010
		SC	33	1/4/2007	10:39:00	5.41E+03	6.05E+03	-	1110	1010
2	5	BC	34	1/4/2007	10:40:00	5.00E+03			1110	1010
		SC	35	1/4/2007	10:41:00	4.35E+03	6.01E+03	-	1110	1010
2	6	BC	36	1/4/2007	10:42:00	4.59E+03			1110	1010
		SC	37	1/4/2007	10:42:00	4.49E+03	5.56E+03	-	1110	1010
2	7	BC	38	1/4/2007	10:43:00	4.96E+03			1110	1010
		SC	39	1/4/2007	10:43:00	4.57E+03	5.97E+03	-	1110	1010
2	8	BC	40	1/4/2007	10:44:00	4.63E+03			1110	1010
		SC	41	1/4/2007	10:45:00	4.55E+03	5.60E+03	-	1110	1010
2	9	BC	42	1/4/2007	10:46:00	4.40E+03			1110	1010
		SC	43	1/4/2007	10:47:00	4.24E+03	5.35E+03	-	1110	1010
2	10	BC	44	1/4/2007	10:47:00	4.29E+03			1110	1010
		SC	45	1/4/2007	10:48:00	4.81E+03	5.23E+03	-	1110	1010
2	11	BC	46	1/4/2007	10:48:00	4.50E+03			1110	1010
		SC	47	1/4/2007	10:49:00	4.51E+03	5.46E+03	-	1110	1010
2	12	BC	48	1/4/2007	10:49:00	4.86E+03			1110	1010
		SC	49	1/4/2007	10:50:00	4.24E+03	5.86E+03	-	1110	1010
2	13	BC	50	1/4/2007	10:50:00	6.21E+03			1110	1010
		SC	51	1/4/2007	10:52:00	5.04E+03	7.34E+03	-	1110	1010

Survey Unit 9539-0001
Scan Area #03
Strip Scan Results

Scan Area	Strip Number	Type Reading	Log Number	Log Date	Log Time	Reading (cpm)	Action Level	>Action Level	E-600 S/N	Probe S/N
3	1	BC	52	1/4/2007	13:28:00	5.33E+03			1110	1010
		SC	53	1/4/2007	13:30:00	4.87E+03	6.37E+03	-	1110	1010
3	2	BC	54	1/4/2007	13:30:00	7.67E+03			1110	1010
		SC	55	1/4/2007	13:33:00	6.79E+03	8.92E+03	-	1110	1010
3	3	BC	56	1/4/2007	13:36:00	5.95E+03			1110	1010
		SC	57	1/4/2007	13:38:00	5.63E+03	7.05E+03	-	1110	1010
3	4	BC	58	1/4/2007	13:39:00	5.03E+03			1110	1010
		SC	59	1/4/2007	13:41:00	5.05E+03	6.04E+03	-	1110	1010
3	5	BC	60	1/4/2007	13:42:00	5.40E+03			1110	1010
		SC	61	1/4/2007	13:44:00	4.93E+03	6.45E+03	-	1110	1010
3	6	BC	62	1/4/2007	13:45:00	4.64E+03			1110	1010
		SC	63	1/4/2007	13:50:00	5.13E+03	5.61E+03	-	1110	1010
3	7	BC	64	1/4/2007	13:51:00	4.92E+03			1110	1010
		SC	65	1/4/2007	13:53:00	4.94E+03	5.92E+03	-	1110	1010
3	8	BC	66	1/4/2007	13:53:00	5.30E+03			1110	1010
		SC	67	1/4/2007	13:56:00	5.17E+03	6.34E+03	-	1110	1010
3	9	BC	68	1/4/2007	13:57:00	5.14E+03			1110	1010
		SC	69	1/4/2007	13:59:00	4.80E+03	6.16E+03	-	1110	1010
3	10	BC	70	1/4/2007	14:00:00	4.92E+03			1110	1010
		SC	71	1/4/2007	14:02:00	4.78E+03	5.92E+03	-	1110	1010
3	11	BC	72	1/4/2007	14:03:00	4.95E+03			1110	1010
		SC	73	1/4/2007	14:05:00	4.95E+03	5.95E+03	-	1110	1010
3	12	BC	74	1/4/2007	14:07:00	5.45E+03			1110	1010
		SC	75	1/4/2007	14:12:00	5.34E+03	6.50E+03	-	1110	1010
3	13	BC	76	1/4/2007	14:12:00	5.85E+03			1110	1010
		SC	77	1/4/2007	14:19:00	4.91E+03	6.94E+03	-	1110	1010
3		ER	78	1/4/2007	14:20:00	7.84E+03			1110	1010
		ER	79	1/4/2007	14:21:00	1.05E+04			1110	1010

Survey Unit 9539-0001
Scan Area #04
Strip Scan Results

Scan Area	Strip Number	Type Reading	Log Number	Log Date	Log Time	Reading (cpm)	Action Level	> Action Level	E-600 S/N	Probe S/N
4	1	BC	1	1/5/2007	7:50:00	5.62E+03			1110	1010
		SC	2	1/5/2007	7:52:00	5.18E+03	6.69E+03	-	1110	1010
4	2	BC	3	1/5/2007	7:53:00	5.32E+03			1110	1010
		SC	4	1/5/2007	7:55:00	5.44E+03	6.36E+03	-	1110	1010
4	3	BC	5	1/5/2007	7:55:00	4.59E+03			1110	1010
		SC	6	1/5/2007	7:57:00	4.76E+03	5.56E+03	-	1110	1010
4	4	BC	7	1/5/2007	7:57:00	4.75E+03			1110	1010
		SC	8	1/5/2007	7:59:00	4.55E+03	5.73E+03	-	1110	1010
4	5	BC	9	1/5/2007	7:59:00	5.02E+03			1110	1010
		SC	10	1/5/2007	8:00:00	5.01E+03	6.03E+03	-	1110	1010
4	6	BC	11	1/5/2007	8:01:00	4.74E+03			1110	1010
		SC	12	1/5/2007	8:02:00	4.69E+03	5.72E+03	-	1110	1010
4	7	BC	13	1/5/2007	8:02:00	4.52E+03			1110	1010
		SC	14	1/5/2007	8:04:00	4.32E+03	5.48E+03	-	1110	1010
4	8	BC	15	1/5/2007	8:04:00	4.56E+03			1110	1010
		SC	16	1/5/2007	8:05:00	4.77E+03	5.52E+03	-	1110	1010
4	9	BC	17	1/5/2007	8:06:00	5.10E+03			1110	1010
		SC	18	1/5/2007	8:08:00	5.11E+03	6.12E+03	-	1110	1010
4	10	BC	19	1/5/2007	8:08:00	4.86E+03			1110	1010
		SC	20	1/5/2007	8:10:00	5.15E+03	5.86E+03	-	1110	1010
4	11	BC	21	1/5/2007	8:12:00	4.55E+03			1110	1010
		SC	22	1/5/2007	8:13:00	4.70E+03	5.51E+03	-	1110	1010

Survey Unit 9539-0001
Scan Area #05
Strip Scan Results

Scan Area	Strip Number	Type Reading	Log Number	Log Date	Log Time	Reading (cpm)	Action Level	>Action Level	E-600 S/N	Probe S/N
5	1	BC	2	1/9/2007	8:02:00	7.55E+03			1114	1014
		SC	3	1/9/2007	8:09:00	7.89E+03	8.79E+03	-	1114	1014
5	2	BC	4	1/9/2007	8:09:00	7.50E+03			1114	1014
		SC	5	1/9/2007	8:11:00	7.81E+03	8.74E+03	-	1114	1014
5	3	BC	6	1/9/2007	8:12:00	5.82E+03			1114	1014
		SC	7	1/9/2007	8:13:00	5.20E+03	6.91E+03	-	1114	1014
5	4	BC	8	1/9/2007	8:14:00	5.26E+03			1114	1014
		SC	9	1/9/2007	8:15:00	4.93E+03	6.30E+03	-	1114	1014
5	5	BC	10	1/9/2007	8:16:00	5.52E+03			1114	1014
		SC	11	1/9/2007	8:18:00	5.01E+03	6.58E+03	-	1114	1014
5	6	BC	12	1/9/2007	8:18:00	6.05E+03			1114	1014
		SC	13	1/9/2007	8:20:00	5.59E+03	7.16E+03	-	1114	1014
5	7	BC	14	1/9/2007	8:20:00	6.11E+03			1114	1014
		SC	15	1/9/2007	8:22:00	6.33E+03	7.23E+03	-	1114	1014
5	8	BC	16	1/9/2007	8:23:00	6.34E+03			1114	1014
		SC	17	1/9/2007	8:26:00	5.89E+03	7.48E+03	-	1114	1014
5	9	BC	18	1/9/2007	8:26:00	6.42E+03			1114	1014
		SC	19	1/9/2007	8:30:00	5.82E+03	7.56E+03	-	1114	1014
5	10	BC	20	1/9/2007	8:30:00	7.53E+03			1114	1014
		SC	21	1/9/2007	8:36:00	7.31E+03	8.77E+03	-	1114	1014
5	11	BC	22	1/9/2007	8:37:00	9.27E+03			1114	1014
		SC	23	1/9/2007	8:40:00	9.62E+03	1.06E+04	-	1114	1014
5	10	ER N	24	1/9/2007	8:42:00	8.98E+03			1114	1014
		ER S	26	1/9/2007	8:43:00	8.78E+03			1114	1014
5	1	ER N	27	1/9/2007	10:04:00	1.07E+04			1114	1014
		ER M	28	1/9/2007	10:05:00	1.18E+04			1114	1014
5	1	ER S	29	1/9/2007	10:06:00	1.27E+04			1114	1014

Survey Unit 9539-0001
Scan Area #06
Strip Scan Results

Scan Area	Strip Number	Type Reading	Log Number	Log Date	Log Time	Reading (cpm)	Action Level	>Action Level	E-600 S/N	Probe S/N
6	1	BC	1	1/5/2007	7:58:00	6.24E+03			1112	1013
		SC	2	1/5/2007	8:00:00	6.36E+03	7.37E+03	-	1112	1013
6	3	BC	7	1/5/2007	8:12:00	7.11E+03			1112	1013
		SC	8	1/5/2007	8:13:00	6.22E+03	8.31E+03	-	1112	1013
6	4	BC	9	1/5/2007	8:13:00	6.47E+03			1112	1013
		SC	10	1/5/2007	8:15:00	7.25E+03	7.62E+03	-	1112	1013
6	5	BC	11	1/5/2007	8:16:00	6.82E+03			1112	1013
		SC	12	1/5/2007	8:17:00	6.69E+03	8.00E+03	-	1112	1013
6	6	BC	13	1/5/2007	8:17:00	6.53E+03			1112	1013
		SC	14	1/5/2007	8:19:00	6.01E+03	7.68E+03	-	1112	1013
6	7	BC	15	1/5/2007	8:19:00	6.27E+03			1112	1013
		SC	16	1/5/2007	8:21:00	6.02E+03	7.40E+03	-	1112	1013
6	8	BC	17	1/5/2007	8:21:00	6.40E+03			1112	1013
		SC	18	1/5/2007	8:23:00	6.50E+03	7.54E+03	-	1112	1013
6	9	BC	19	1/5/2007	8:24:00	7.40E+03			1112	1013
		SC	20	1/5/2007	8:25:00	6.70E+03	8.63E+03	-	1112	1013
6	10	BC	23	1/5/2007	8:31:00	7.98E+03			1112	1013
		SC	24	1/5/2007	8:32:00	7.89E+03	9.26E+03	-	1112	1013
6	11	BC	25	1/5/2007	8:33:00	8.95E+03			1112	1013
		SC	26	1/5/2007	8:34:00	8.64E+03	1.03E+04	-	1112	1013
6	2	BC	1	1/5/2007	13:01:00	6.46E+03			1112	1013
		SC	3	1/5/2007	13:03:00	9.36E+03	7.61E+03	Yes	1112	1013
6	2	ER	2	1/5/2007	13:03:00	6.88E+03			1112	1013

ISFSI HAUL ROAD (NORTHERN SECTION)

SURVEY UNIT 9539-0001

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)

General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 178924
SDG: MSR#07-0035**

January 15, 2007

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 11, 2007 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
178924001	9539-0001-001-F
178924002	9539-0001-002-F
178924003	9539-0001-003-F
178924004	9539-0001-003-FS
178924005	9539-0001-004-F
178924006	9539-0001-005-F
178924007	9539-0001-006-F
178924008	9539-0001-007-F
178924009	9539-0001-008-F
178924010	9539-0001-009-F
178924011	9539-0001-010-F
178924012	9539-0001-011-F
178924013	9539-0001-012-F
178924014	9539-0001-013-F
178924015	9539-0001-014-F
178924016	9539-0001-015-F
178924017	9539-0001-016-I
178924018	9539-0001-017-I
178924019	9539-0001-018-I
178924020	9539-0001-019-I
178924021	9539-0001-020-I
178924022	9539-0001-021-I

Items of Note

There are no items to note.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

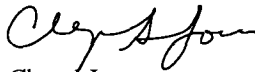
Analytical Request

Twenty soil samples were analyzed for FSSGAM. Two soil samples were analyzed for FSSALL.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, Data Review Qualifier Definitions, and data from the following fractions: Radiochemistry.

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



Cheryl Jones
Project Manager

List of current GEL Certifications as of 15 January 2007

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)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Chain of Custody and Supporting Documentation

No. 2007-00001

Date/Time

Connecticut Yankee Atomic Power Company						Chain of Custody Form						No. 2007-00002		
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556														
Project Name: Haddam Neck Decommissioning						Analyses Requested						Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments: <div style="text-align: center; font-size: 1.2em;">178924</div>	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code							Comment, Preservation	Lab Sample ID	
9539-0001-011-F	01/03/07	1030	TS	G	BP	X								
9539-0001-012-F	01/03/07	1036	TS	G	BP	X								
9539-0001-013-F	01/03/07	1042	TS	G	BP	X								
9539-0001-014-F	01/03/07	1048	TS	G	BP	X								
9539-0001-015-F	01/03/07	1052	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 06-1381 ⁰⁷⁻⁰⁰³⁵ SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other						Internal Container Temp.: <u>15</u> Deg. C Custody Sealed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Custody Seal Intact? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		
1) Relinquished By			Date/Time			2) Received By			Date/Time			Bill of Lading #		
3) Relinquished By			Date/Time			4) Received By			Date/Time					

88

No. 2007-00011

Bill of Lading #

Figure 1. Sample Check-in List

Date/Time Received: 1/11/07 9:30
SDG#: MSR # 06-0034 MSR # 06-0036 , MSR # 07-0035
Work Order Number: 178922 , 178923 , 178924
Shipping Container ID: See cont form Chain of Custody # See cont form
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 15°
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 44
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 ☒
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Jason Pelto Date: 1/11/07
Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client:				SDG/ARCOC/Work Order: 178922, 178923, 178924			
Date Received:				PM(A) Review (ensure non-conforming items are resolved prior to signing):			
Received By:				<i>Amada Thomas</i>			

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

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt #
A Radiological Classification?	X			*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	X			Maximum Counts Observed*: 20 CPM
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	X			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?	X			

PM (or PMA) review of Hazard classification: _____ Initials *AT* Date: 1/11/07

SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

Client:

YANK

Date Received:

1/11/07

Tracking #	COC #
7901 5528 4233	2007-00003
42441	2007-00004
7929 1323 4535	2006-00007
4513	2007-00012
	2007-00001
	2007-00011
	2007-00005
	2007-00002

Data Review Qualifier Definitions

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 178924**

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:	601896
Prep Batch Number:	601632
Dry Soil Prep GL-RAD-A-021 Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260242	Method Blank (MB)
1201260243	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260244	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260245	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Alphaspec Pu, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	601897
Prep Batch Number:	601632
Dry Soil Prep GL-RAD-A-021 Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260246	Method Blank (MB)
1201260247	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260248	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260249	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

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 1201260247 (9539-0001-001-F) was recounted due to poor resolution.

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:	601898
Prep Batch Number:	601632
Dry Soil Prep GL-RAD-A-021 Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260250	Method Blank (MB)
1201260251	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260252	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260253	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

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, 1201260250 (MB), 1201260251 (9539-0001-001-F), 1201260252 (9539-0001-001-F) and 178924001 (9539-0001-001-F), were recounted due to quench.

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:	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:	602157
Prep Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924002	9539-0001-002-F
178924003	9539-0001-003-F
178924004	9539-0001-003-FS
178924005	9539-0001-004-F
178924006	9539-0001-005-F
178924007	9539-0001-006-F
178924008	9539-0001-007-F
178924009	9539-0001-008-F
178924010	9539-0001-009-F
178924011	9539-0001-010-F
178924012	9539-0001-011-F
178924013	9539-0001-012-F
178924014	9539-0001-013-F
178924015	9539-0001-014-F
178924016	9539-0001-015-F
178924017	9539-0001-016-I
178924018	9539-0001-017-I
178924019	9539-0001-018-I
178924020	9539-0001-019-I
1201260863	Method Blank (MB)
1201260864	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260865	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 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: 178924001 (9539-0001-001-F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

The sample and the duplicate, 1201260864 (9539-0001-001-F) and 178924001 (9539-0001-001-F), for Cs-137 and Pb-214 did not meet the relative percent difference requirement, however they do meet the relative error ratio requirement with value of 1.24666 for Cs-137 and 2.25234 for Pb-214.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak-width.	Cesium-137	178924014
		Lead-212	178924012
UI	Data rejected due to interference.	Europium-155	178924019
UI	Data rejected due to low abundance.	Actinium-228	178924012
		Cesium-134	178924001
			178924003
			178924013
			178924015
			178924016
			178924017
			178924018
			178924019
			178924020
			1201260864
		Niobium-94	178924002
		Silver-108m	178924014
UI	Data rejected due to no valid peak.	Cesium-134	178924014

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: 602159

Prep Batch Number: 601628

Sample ID	Client ID
178924021	9539-0001-020-I
178924022	9539-0001-021-I
1201260866	Method Blank (MB)
1201260867	178923021(9539-0002-020-I) Sample Duplicate (DUP)
1201260868	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 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: 178923021 (9539-0002-020-I).

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 low abundance.	Bismuth-214	1201260866
		Cesium-134	178924021
			178924022
			1201260867
		Lead-212	1201260866
		Niobium-94	178924021
		Potassium-40	1201260866
		Radium-226	1201260866

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:	601901
Prep Batch Number:	601632
Dry Soil Prep GL-RAD-A-021 Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260261	Method Blank (MB)
1201260262	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260263	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260264	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

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

Sample 178923011 result is greater than the mda and tpu. Client gave permission to send.

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: 601908

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260283	Method Blank (MB)
1201260284	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260285	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260286	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

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:	602972
Prep Batch Number:	601632
Dry Soil Prep GL-RAD-A-021 Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201262579	Method Blank (MB)
1201262580	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201262581	178924001(9539-0001-001-F) Matrix Spike (MS)
1201262582	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were recounted due to low/high recovery. Samples were reprepared due to low/high carrier/tracer yield. Samples were reprepared due to low/high recovery.

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	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:	601907
Prep Batch Number:	601632
Dry Soil Prep GL-RAD-A-021 Batch Number:	601611

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260279	Method Blank (MB)
1201260280	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260281	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260282	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

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 - 3 pCi/g

Analytical Method: EPA 906.0 Modified

Analytical Batch Number: 601909

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260287	Method Blank (MB)
1201260288	178923010(9539-0002-009-F) Sample Duplicate (DUP)
1201260289	178923010(9539-0002-009-F) Matrix Spike (MS)
1201260290	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 13.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 178923010 (9539-0002-009-F).

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 1201260290 (LCS) was recounted due to analyst transcription error.

Miscellaneous Information:**NCR Documentation**

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

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: 601910

Sample ID	Client ID
178924001	9539-0001-001-F
178924008	9539-0001-007-F
1201260291	Method Blank (MB)
1201260292	178924001(9539-0001-001-F) Sample Duplicate (DUP)
1201260293	178924001(9539-0001-001-F) Matrix Spike (MS)
1201260294	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL 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: 178924001 (9539-0001-001-F).

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 1201260293 (9539-0001-001-F) was recounted due to spectral interference.

Miscellaneous Information:**NCR Documentation**

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

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: Pamela Wilkas 1/18/07

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#07-0035 GEL Work Order: 178924

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

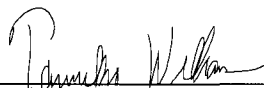
ND The analyte concentration is not detected above the detection limit.

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 GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by



GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-001-F
Sample ID: 178924001
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 13.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	A
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.00849	+/-0.111	0.089	+/-0.111	0.273	pCi/g		MXA	01/12/07	1919	601896	
									1				
Curium-242	U	-0.0527	+/-0.0421	0.0804	+/-0.0426	0.260	pCi/g						
Curium-243/244	U	0.0126	+/-0.131	0.104	+/-0.131	0.304	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.00119	+/-0.0649	0.0536	+/-0.0649	0.188	pCi/g		MXA	01/12/07	1614	601897	
									1				
Plutonium-239/240	U	-0.0358	+/-0.0314	0.0599	+/-0.0317	0.201	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-9.26	+/-9.39	8.27	+/-9.39	17.3	pCi/g		MXA	01/16/07	0727	601898	
									1				
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.659	+/-0.176	0.0651	+/-0.176	0.142	pCi/g		MJH1	01/15/07	0701	602157	
Americium-241	U	0.00967	+/-0.0287	0.0227	+/-0.0287	0.0471	pCi/g						
Bismuth-212		0.628	+/-0.290	0.130	+/-0.290	0.283	pCi/g						
Bismuth-214		0.591	+/-0.0888	0.0316	+/-0.0888	0.0681	pCi/g						
Cesium-134	UI	0.00	+/-0.0458	0.0237	+/-0.0458	0.0508	pCi/g						
Cesium-137		0.167	+/-0.0556	0.0178	+/-0.0556	0.0384	pCi/g						
Cobalt-60	U	-0.00235	+/-0.0253	0.0207	+/-0.0253	0.0461	pCi/g						
Europium-152	U	-0.0256	+/-0.0525	0.0417	+/-0.0525	0.0885	pCi/g						
Europium-154	U	-0.0453	+/-0.0805	0.0626	+/-0.0805	0.138	pCi/g						
Europium-155	U	0.029	+/-0.0416	0.0385	+/-0.0416	0.0802	pCi/g						
Lead-212		0.638	+/-0.058	0.0236	+/-0.058	0.0494	pCi/g						
Lead-214		0.715	+/-0.0987	0.0299	+/-0.0987	0.0635	pCi/g						
Manganese-54	U	-0.00805	+/-0.0216	0.0169	+/-0.0216	0.037	pCi/g						
Niobium-94	U	-0.000198	+/-0.0203	0.0169	+/-0.0203	0.0363	pCi/g						
Potassium-40		9.53	+/-0.860	0.171	+/-0.860	0.389	pCi/g						
Radium-226		0.591	+/-0.0888	0.0316	+/-0.0888	0.0681	pCi/g						
Silver-108m	U	0.00819	+/-0.0187	0.0168	+/-0.0187	0.0357	pCi/g						
Thallium-208		0.216	+/-0.0502	0.0152	+/-0.0502	0.033	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00386	+/-0.0267	0.0222	+/-0.0267	0.0469	pCi/g		KSD1	01/15/07	1802	601901	

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539–0001–001–F
Sample ID: 178924001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid – 3 pCi/g</i>													
Tritium	U	1.27	+/-1.37	1.07	+/-1.37	2.30	pCi/g		MXPI	01/15/07	1500	601909	
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	-0.00673	+/-0.119	0.0997	+/-0.119	0.203	pCi/g		MXPI	01/15/07	1636	601910	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-17.2	+/-28.4	20.9	+/-28.4	44.3	pCi/g		MXPI	01/18/07	0819	602972	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	0.00	+/-9.32	7.82	+/-9.32	16.5	pCi/g		KXRI	01/15/07	1035	601907	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99		0.387	+/-0.187	0.151	+/-0.188	0.308	pCi/g		MXPI	01/17/07	1210	601908	

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	JMB1	01/11/07	1031	601611

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 Fe–1, Modified
10	DOE RESL Ni–1, Modified
11	DOE EML HASL–300, Tc–02–RC Modified
12	DOE EML HASL–300, Tc–02–RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium–243	Alphaspec Am241, Cm, Solid ALL	91	(15%–125%)
Plutonium–242	Alphaspec Pu, Solid–ALL FSS	84	(15%–125%)
Plutonium–241	Liquid Scint Pu241, Solid–ALL FS	83	(25%–125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-001-F
Sample ID: 178924001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	A
Carrier/Tracer Recovery		Liquid Scint Pu241, Solid-ALL FS			83		(25%-125%)					
Strontium-90		GFPC, Sr90, solid-ALL FSS			86		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			86		(25%-125%)					
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			82		(25%-125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			82		(25%-125%)					
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			77		(15%-125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			77		(15%-125%)					

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < 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
 - ND Analyte concentration is not detected above the detection limit
 - 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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-002-F
Sample ID: 178924002
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 5.95%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.381	+/-0.160	0.0558	+/-0.160	0.124	pCi/g						
Americium-241	U	-0.0033	+/-0.0246	0.0207	+/-0.0246	0.0433	pCi/g						
Bismuth-212	U	0.266	+/-0.283	0.129	+/-0.283	0.282	pCi/g						
Bismuth-214		0.328	+/-0.0788	0.0336	+/-0.0788	0.0721	pCi/g						
Cesium-134	U	0.0438	+/-0.0328	0.0238	+/-0.0328	0.051	pCi/g						
Cesium-137	U	-0.00212	+/-0.0216	0.0192	+/-0.0216	0.0413	pCi/g						
Cobalt-60	U	-0.00886	+/-0.0297	0.0201	+/-0.0297	0.0448	pCi/g						
Europium-152	U	-0.00729	+/-0.0473	0.0415	+/-0.0473	0.0882	pCi/g						
Europium-154	U	0.0406	+/-0.0594	0.0546	+/-0.0594	0.122	pCi/g						
Europium-155	U	0.022	+/-0.0562	0.0354	+/-0.0562	0.074	pCi/g						
Lead-212		0.284	+/-0.0507	0.0242	+/-0.0507	0.0508	pCi/g						
Lead-214		0.343	+/-0.0753	0.0287	+/-0.0753	0.0612	pCi/g						
Manganese-54	U	0.0138	+/-0.0215	0.0132	+/-0.0215	0.0296	pCi/g						
Niobium-94	UI	0.00	+/-0.0455	0.0187	+/-0.0455	0.040	pCi/g						
Potassium-40		7.18	+/-0.811	0.155	+/-0.811	0.356	pCi/g						
Radium-226		0.328	+/-0.0788	0.0336	+/-0.0788	0.0721	pCi/g						
Silver-108m	U	0.012	+/-0.0168	0.0155	+/-0.0168	0.0331	pCi/g						
Thallium-208		0.130	+/-0.0374	0.0156	+/-0.0374	0.0339	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-002-F
Sample ID: 178924002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-003-F
Sample ID: 178924003
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 21.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.671	+/-0.140	0.044	+/-0.140	0.0879	pCi/g						
Americium-241	U	0.0319	+/-0.106	0.0835	+/-0.106	0.167	pCi/g						
Bismuth-212		0.378	+/-0.170	0.0969	+/-0.170	0.194	pCi/g						
Bismuth-214		0.608	+/-0.0889	0.0255	+/-0.0889	0.0509	pCi/g						
Cesium-134	UI	0.00	+/-0.0192	0.0158	+/-0.0192	0.0315	pCi/g						
Cesium-137		0.174	+/-0.0313	0.0134	+/-0.0313	0.0267	pCi/g						
Cobalt-60	U	-0.00443	+/-0.0173	0.0141	+/-0.0173	0.0281	pCi/g						
Europium-152	U	0.00312	+/-0.047	0.037	+/-0.047	0.074	pCi/g						
Europium-154	U	0.00961	+/-0.0452	0.0382	+/-0.0452	0.0763	pCi/g						
Europium-155	U	0.0261	+/-0.0578	0.047	+/-0.0578	0.094	pCi/g						
Lead-212		0.699	+/-0.0715	0.0211	+/-0.0715	0.0421	pCi/g						
Lead-214		0.604	+/-0.0791	0.0251	+/-0.0791	0.0501	pCi/g						
Manganese-54	U	0.0163	+/-0.0213	0.0133	+/-0.0213	0.0266	pCi/g						
Niobium-94	U	-0.00776	+/-0.015	0.012	+/-0.015	0.024	pCi/g						
Potassium-40		12.1	+/-0.927	0.123	+/-0.927	0.246	pCi/g						
Radium-226		0.608	+/-0.0889	0.0255	+/-0.0889	0.0509	pCi/g						
Silver-108m	U	0.000681	+/-0.0138	0.0118	+/-0.0138	0.0235	pCi/g						
Thallium-208		0.215	+/-0.0369	0.0124	+/-0.0369	0.0247	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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Address : 362 Injun Hollow Rd

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-003-F
Sample ID: 178924003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
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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East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: January 18, 2007

Client Sample ID: 9539-0001-003-FS
Sample ID: 178924004
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 21.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.698	+/-0.181	0.0593	+/-0.181	0.129	pCi/g						
Americium-241	U	0.0734	+/-0.0863	0.045	+/-0.0863	0.0935	pCi/g						
Bismuth-212	U	0.249	+/-0.230	0.163	+/-0.230	0.345	pCi/g						
Bismuth-214		0.488	+/-0.0947	0.0352	+/-0.0947	0.0747	pCi/g						
Cesium-134	U	0.0446	+/-0.033	0.0237	+/-0.033	0.0504	pCi/g						
Cesium-137		0.148	+/-0.0467	0.017	+/-0.0467	0.0366	pCi/g						
Cobalt-60	U	0.0169	+/-0.0225	0.0202	+/-0.0225	0.0445	pCi/g						
Europium-152	U	-0.023	+/-0.0567	0.0466	+/-0.0567	0.0981	pCi/g						
Europium-154	U	-0.0197	+/-0.0542	0.0417	+/-0.0542	0.0943	pCi/g						
Europium-155	U	0.0197	+/-0.0515	0.0473	+/-0.0515	0.0981	pCi/g						
Lead-212		0.710	+/-0.0839	0.0258	+/-0.0839	0.0539	pCi/g						
Lead-214		0.642	+/-0.104	0.0325	+/-0.104	0.0686	pCi/g						
Manganese-54	U	0.0023	+/-0.0209	0.0179	+/-0.0209	0.0386	pCi/g						
Niobium-94	U	-0.00504	+/-0.0205	0.0173	+/-0.0205	0.037	pCi/g						
Potassium-40		11.1	+/-1.11	0.168	+/-1.11	0.376	pCi/g						
Radium-226		0.488	+/-0.0947	0.0352	+/-0.0947	0.0747	pCi/g						
Silver-108m	U	0.00319	+/-0.0197	0.0166	+/-0.0197	0.0351	pCi/g						
Thallium-208		0.220	+/-0.0531	0.0159	+/-0.0531	0.0341	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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Address : 362 Injun Hollow Rd

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-003-FS
Sample ID: 178924004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-004-F
Sample ID: 178924005
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 6.72%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.389	+/-0.127	0.0428	+/-0.127	0.0962	pCi/g					
Americium-241	U	-0.0104	+/-0.0652	0.0547	+/-0.0652	0.115	pCi/g					
Bismuth-212	U	0.211	+/-0.154	0.137	+/-0.154	0.294	pCi/g					
Bismuth-214		0.301	+/-0.0748	0.025	+/-0.0748	0.0543	pCi/g					
Cesium-134	U	0.0167	+/-0.0184	0.0172	+/-0.0184	0.0375	pCi/g					
Cesium-137		0.0366	+/-0.019	0.0133	+/-0.019	0.0292	pCi/g					
Cobalt-60	U	0.0281	+/-0.0194	0.0198	+/-0.0194	0.0436	pCi/g					
Europium-152	U	-0.0242	+/-0.0415	0.0332	+/-0.0415	0.0713	pCi/g					
Europium-154	U	-0.0144	+/-0.0508	0.0355	+/-0.0508	0.0821	pCi/g					
Europium-155	U	-0.0142	+/-0.0431	0.0387	+/-0.0431	0.081	pCi/g					
Lead-212		0.360	+/-0.0593	0.0207	+/-0.0593	0.0435	pCi/g					
Lead-214		0.308	+/-0.0745	0.0236	+/-0.0745	0.0507	pCi/g					
Manganese-54	U	-0.0043	+/-0.0162	0.0133	+/-0.0162	0.0294	pCi/g					
Niobium-94	U	0.0133	+/-0.0155	0.0144	+/-0.0155	0.0312	pCi/g					
Potassium-40		5.52	+/-0.797	0.122	+/-0.797	0.285	pCi/g					
Radium-226		0.301	+/-0.0748	0.025	+/-0.0748	0.0543	pCi/g					
Silver-108m	U	-0.0124	+/-0.0147	0.0122	+/-0.0147	0.0263	pCi/g					
Thallium-208		0.136	+/-0.0354	0.0136	+/-0.0354	0.0296	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-004-F
Sample ID: 178924005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-005-F
Sample ID: 178924006
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 4.66%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.229	+/-0.0949	0.0415	+/-0.0949	0.0918	pCi/g		MJH1	01/15/07	1031	602157
Americium-241	U	-0.000887	+/-0.0684	0.0578	+/-0.0684	0.121	pCi/g					
Bismuth-212		0.322	+/-0.233	0.0917	+/-0.233	0.200	pCi/g					
Bismuth-214		0.196	+/-0.0593	0.0244	+/-0.0593	0.0524	pCi/g					
Cesium-134	U	0.00365	+/-0.0153	0.0135	+/-0.0153	0.0295	pCi/g					
Cesium-137	U	-0.00346	+/-0.0137	0.0117	+/-0.0137	0.0254	pCi/g					
Cobalt-60	U	0.00964	+/-0.0441	0.0118	+/-0.0441	0.0269	pCi/g					
Europium-152	U	0.0585	+/-0.0361	0.0333	+/-0.0361	0.0709	pCi/g					
Europium-154	U	-0.0396	+/-0.0443	0.0327	+/-0.0443	0.0747	pCi/g					
Europium-155	U	0.0132	+/-0.038	0.0375	+/-0.038	0.0783	pCi/g					
Lead-212		0.303	+/-0.0393	0.0172	+/-0.0393	0.0364	pCi/g					
Lead-214		0.260	+/-0.0615	0.0216	+/-0.0615	0.0462	pCi/g					
Manganese-54	U	0.0144	+/-0.0156	0.0146	+/-0.0156	0.0315	pCi/g					
Niobium-94	U	0.00389	+/-0.0123	0.0111	+/-0.0123	0.024	pCi/g					
Potassium-40		4.48	+/-0.542	0.120	+/-0.542	0.274	pCi/g					
Radium-226		0.196	+/-0.0593	0.0244	+/-0.0593	0.0524	pCi/g					
Silver-108m	U	-0.00461	+/-0.012	0.0107	+/-0.012	0.023	pCi/g					
Thallium-208		0.0609	+/-0.0321	0.0122	+/-0.0321	0.0264	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-005-F
Sample ID: 178924006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-006-F
Sample ID: 178924007
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 5.19%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.253	+/-0.0818	0.0404	+/-0.0818	0.0858	pCi/g					
Americium-241	U	0.0537	+/-0.0684	0.0572	+/-0.0684	0.118	pCi/g					
Bismuth-212		0.293	+/-0.129	0.0771	+/-0.129	0.164	pCi/g					
Bismuth-214		0.222	+/-0.0524	0.0174	+/-0.0524	0.037	pCi/g					
Cesium-134	U	0.018	+/-0.0173	0.0122	+/-0.0173	0.0258	pCi/g					
Cesium-137	U	-0.000305	+/-0.011	0.00941	+/-0.011	0.0201	pCi/g					
Cobalt-60	U	0.00413	+/-0.0118	0.0104	+/-0.0118	0.0227	pCi/g					
Europium-152	U	-0.00823	+/-0.0307	0.0256	+/-0.0307	0.0535	pCi/g					
Europium-154	U	0.0584	+/-0.0582	0.0319	+/-0.0582	0.0691	pCi/g					
Europium-155	U	0.0186	+/-0.0313	0.0297	+/-0.0313	0.0613	pCi/g					
Lead-212		0.289	+/-0.0355	0.0158	+/-0.0355	0.0328	pCi/g					
Lead-214		0.305	+/-0.0509	0.0177	+/-0.0509	0.0371	pCi/g					
Manganese-54	U	0.00349	+/-0.0118	0.0101	+/-0.0118	0.0216	pCi/g					
Niobium-94	U	0.00352	+/-0.0102	0.00895	+/-0.0102	0.019	pCi/g					
Potassium-40		4.81	+/-0.426	0.083	+/-0.426	0.186	pCi/g					
Radium-226		0.222	+/-0.0524	0.0174	+/-0.0524	0.037	pCi/g					
Silver-108m	U	-0.000894	+/-0.00925	0.00819	+/-0.00925	0.0173	pCi/g					
Thallium-208		0.0991	+/-0.0253	0.00888	+/-0.0253	0.0189	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-006-F
Sample ID: 178924007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-007-F
Sample ID: 178924008
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 6.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0704	+/-0.101	0.119	+/-0.101	0.337	pCi/g		MXA	01/12/07	1919	601896	
									1				
Curium-242	U	0.00153	+/-0.0833	0.0687	+/-0.0833	0.241	pCi/g						
Curium-243/244	U	-0.0765	+/-0.124	0.136	+/-0.125	0.372	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0285	+/-0.0645	0.0533	+/-0.0645	0.187	pCi/g		MXA	01/12/07	1614	601897	
									1				
Plutonium-239/240	U	-0.0415	+/-0.073	0.0842	+/-0.0732	0.249	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	2.28	+/-7.86	6.50	+/-7.87	13.6	pCi/g		MXA	01/15/07	2338	601898	
									1				
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.490	+/-0.147	0.0602	+/-0.147	0.132	pCi/g		MJH1	01/15/07	1033	602157	
Americium-241	U	0.017	+/-0.0281	0.024	+/-0.0281	0.0497	pCi/g						
Bismuth-212		0.524	+/-0.238	0.159	+/-0.238	0.341	pCi/g						
Bismuth-214		0.402	+/-0.0977	0.0332	+/-0.0977	0.0714	pCi/g						
Cesium-134	U	0.0469	+/-0.048	0.0224	+/-0.048	0.0482	pCi/g						
Cesium-137		0.0579	+/-0.0508	0.0178	+/-0.0508	0.0385	pCi/g						
Cobalt-60	U	0.0176	+/-0.0218	0.0205	+/-0.0218	0.0456	pCi/g						
Europium-152	U	-0.011	+/-0.049	0.0431	+/-0.049	0.0915	pCi/g						
Europium-154	U	0.0257	+/-0.0552	0.0502	+/-0.0552	0.113	pCi/g						
Europium-155	U	0.0465	+/-0.0512	0.0402	+/-0.0512	0.0836	pCi/g						
Lead-212		0.447	+/-0.0674	0.0297	+/-0.0674	0.0618	pCi/g						
Lead-214		0.453	+/-0.0822	0.0311	+/-0.0822	0.066	pCi/g						
Manganese-54	U	-0.00124	+/-0.0222	0.0184	+/-0.0222	0.040	pCi/g						
Niobium-94	U	-0.00812	+/-0.0207	0.0168	+/-0.0207	0.0363	pCi/g						
Potassium-40		8.72	+/-0.786	0.144	+/-0.786	0.333	pCi/g						
Radium-226		0.402	+/-0.0977	0.0332	+/-0.0977	0.0714	pCi/g						
Silver-108m	U	0.0151	+/-0.0182	0.017	+/-0.0182	0.036	pCi/g						
Thallium-208		0.180	+/-0.0417	0.0171	+/-0.0417	0.0368	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0138	+/-0.0257	0.0223	+/-0.0257	0.0473	pCi/g		KSD1	01/15/07	1802	601901	
Rad Liquid Scintillation Analysis													

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-007-F
Sample ID: 178924008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>LSC, Tritium Dist, Solid – 3 pCi/g</i>												
Tritium	U	0.705	+/-1.34	1.08	+/-1.34	2.32	pCi/g		MXP1	01/15/07	1531	601909
<i>Liquid Scint C14, Solid ALL FSS</i>												
Carbon-14	U	-0.0725	+/-0.115	0.0975	+/-0.115	0.199	pCi/g		MXP1	01/15/07	1740	601910
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	-27.2	+/-24.6	18.6	+/-24.6	39.5	pCi/g		MXP1	01/18/07	0835	602972
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	-0.273	+/-8.82	7.42	+/-8.82	15.6	pCi/g		KXR1	01/15/07	1052	601907
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99	U	0.0745	+/-0.174	0.145	+/-0.174	0.295	pCi/g		MXP1	01/17/07	1257	601908

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	01/11/07	1031	601611

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 Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified
12	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	98	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	81	(15%-125%)
Plutonium-241	Liquid Scint Pu241, Solid-ALL FS	97	(25%-125%)

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-007-F
Sample ID: 178924008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Carrier/Tracer Recovery		Liquid Scint Pu241, Solid-ALL FS			97		(25%-125%)						
Strontium-90		GFPC, Sr90, solid-ALL FSS			79		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			79		(25%-125%)						
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			89		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			89		(25%-125%)						
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			79		(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
 - ** Analyte is a surrogate compound
 - < 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-008-F
Sample ID: 178924009
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 19.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.07	+/-0.227	0.062	+/-0.227	0.135	pCi/g		MJH1	01/15/07	1034	602157
Americium-241	U	0.044	+/-0.116	0.0918	+/-0.116	0.190	pCi/g					
Bismuth-212		0.449	+/-0.374	0.135	+/-0.374	0.291	pCi/g					
Bismuth-214		1.04	+/-0.162	0.0355	+/-0.162	0.0757	pCi/g					
Cesium-134	U	0.0554	+/-0.0476	0.0273	+/-0.0476	0.0578	pCi/g					
Cesium-137		0.134	+/-0.0524	0.0223	+/-0.0524	0.0474	pCi/g					
Cobalt-60	U	0.0165	+/-0.025	0.0224	+/-0.025	0.0491	pCi/g					
Europium-152	U	-0.00372	+/-0.0603	0.0534	+/-0.0603	0.112	pCi/g					
Europium-154	U	-0.062	+/-0.0734	0.0544	+/-0.0734	0.121	pCi/g					
Europium-155	U	0.0698	+/-0.0656	0.0613	+/-0.0656	0.127	pCi/g					
Lead-212		0.997	+/-0.103	0.0265	+/-0.103	0.0552	pCi/g					
Lead-214		1.08	+/-0.142	0.0371	+/-0.142	0.0778	pCi/g					
Manganese-54	U	0.00444	+/-0.0232	0.0204	+/-0.0232	0.0438	pCi/g					
Niobium-94	U	-0.00299	+/-0.0249	0.0179	+/-0.0249	0.0383	pCi/g					
Potassium-40		10.8	+/-1.13	0.144	+/-1.13	0.331	pCi/g					
Radium-226		1.04	+/-0.162	0.0355	+/-0.162	0.0757	pCi/g					
Silver-108m	U	0.00519	+/-0.0194	0.0172	+/-0.0194	0.0364	pCi/g					
Thallium-208		0.344	+/-0.0618	0.0182	+/-0.0618	0.039	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-008-F
Sample ID: 178924009

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

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-009-F
Sample ID: 178924010
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 5.39%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.349	+/-0.132	0.0449	+/-0.132	0.0984	pCi/g		MJH1	01/15/07	1034	602157
Americium-241	U	0.00885	+/-0.0613	0.0588	+/-0.0613	0.122	pCi/g					
Bismuth-212		0.278	+/-0.153	0.102	+/-0.153	0.220	pCi/g					
Bismuth-214		0.349	+/-0.0714	0.0264	+/-0.0714	0.0565	pCi/g					
Cesium-134	U	0.0216	+/-0.0184	0.0172	+/-0.0184	0.0369	pCi/g					
Cesium-137		0.0971	+/-0.0369	0.0132	+/-0.0369	0.0285	pCi/g					
Cobalt-60		0.0459	+/-0.0299	0.0137	+/-0.0299	0.0306	pCi/g					
Europium-152	U	0.0147	+/-0.0377	0.035	+/-0.0377	0.0741	pCi/g					
Europium-154	U	0.0207	+/-0.0525	0.0465	+/-0.0525	0.102	pCi/g					
Europium-155	U	0.00741	+/-0.0414	0.0385	+/-0.0414	0.0802	pCi/g					
Lead-212		0.330	+/-0.067	0.0254	+/-0.067	0.0528	pCi/g					
Lead-214		0.327	+/-0.0846	0.0231	+/-0.0846	0.0492	pCi/g					
Manganese-54	U	-0.00955	+/-0.016	0.0134	+/-0.016	0.029	pCi/g					
Niobium-94	U	-0.00179	+/-0.0151	0.0127	+/-0.0151	0.0272	pCi/g					
Potassium-40		6.55	+/-0.789	0.135	+/-0.789	0.304	pCi/g					
Radium-226		0.349	+/-0.0714	0.0264	+/-0.0714	0.0565	pCi/g					
Silver-108m	U	0.00272	+/-0.014	0.0126	+/-0.014	0.0269	pCi/g					
Thallium-208		0.123	+/-0.0324	0.0144	+/-0.0324	0.0308	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-009-F
Sample ID: 178924010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
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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
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N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
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UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-010-F
Sample ID: 178924011
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 7.31%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.472	+/-0.107	0.0263	+/-0.107	0.0559	pCi/g					
Americium-241	U	0.0198	+/-0.0375	0.0336	+/-0.0375	0.0689	pCi/g					
Bismuth-212		0.241	+/-0.111	0.061	+/-0.111	0.128	pCi/g					
Bismuth-214		0.336	+/-0.0569	0.0157	+/-0.0569	0.0328	pCi/g					
Cesium-134	U	0.00884	+/-0.014	0.00932	+/-0.014	0.0196	pCi/g					
Cesium-137		0.0376	+/-0.0159	0.00752	+/-0.0159	0.0158	pCi/g					
Cobalt-60	U	0.00425	+/-0.00997	0.00895	+/-0.00997	0.0192	pCi/g					
Europium-152	U	-0.00729	+/-0.0242	0.0207	+/-0.0242	0.0429	pCi/g					
Europium-154	U	-0.0187	+/-0.0291	0.024	+/-0.0291	0.0514	pCi/g					
Europium-155	U	0.0155	+/-0.031	0.0229	+/-0.031	0.0469	pCi/g					
Lead-212		0.412	+/-0.0447	0.012	+/-0.0447	0.0247	pCi/g					
Lead-214		0.317	+/-0.0503	0.0149	+/-0.0503	0.0308	pCi/g					
Manganese-54	U	0.00105	+/-0.00944	0.00818	+/-0.00944	0.0172	pCi/g					
Niobium-94	U	-0.00317	+/-0.00806	0.00689	+/-0.00806	0.0145	pCi/g					
Potassium-40		8.36	+/-0.730	0.0779	+/-0.730	0.169	pCi/g					
Radium-226		0.336	+/-0.0569	0.0157	+/-0.0569	0.0328	pCi/g					
Silver-108m	U	0.00204	+/-0.00743	0.00688	+/-0.00743	0.0143	pCi/g					
Thallium-208		0.128	+/-0.0252	0.00731	+/-0.0252	0.0154	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	JMB1	01/11/07	1031	601611

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-010-F
Sample ID: 178924011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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** Analyte is a surrogate compound
< 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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-011-F
Sample ID: 178924012
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 4.74%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228	UI	0.00	+/-0.182	0.124	+/-0.182	0.259	pCi/g		MJH1	01/15/07	1035	602157
Americium-241	U	-0.16	+/-0.0842	0.0566	+/-0.0842	0.117	pCi/g					
Bismuth-212		0.377	+/-0.234	0.141	+/-0.234	0.303	pCi/g					
Bismuth-214		0.332	+/-0.110	0.0347	+/-0.110	0.0738	pCi/g					
Cesium-134	U	0.0193	+/-0.0234	0.0209	+/-0.0234	0.045	pCi/g					
Cesium-137	U	-0.00403	+/-0.0211	0.0174	+/-0.0211	0.0373	pCi/g					
Cobalt-60	U	-0.0163	+/-0.023	0.0176	+/-0.023	0.0393	pCi/g					
Europium-152	U	0.0078	+/-0.0921	0.0471	+/-0.0921	0.0993	pCi/g					
Europium-154	U	0.0358	+/-0.0649	0.0584	+/-0.0649	0.128	pCi/g					
Europium-155	U	0.00925	+/-0.0562	0.0484	+/-0.0562	0.100	pCi/g					
Lead-212	UI	0.00	+/-0.0954	0.0269	+/-0.0954	0.0562	pCi/g					
Lead-214		0.430	+/-0.109	0.0366	+/-0.109	0.077	pCi/g					
Manganese-54	U	0.000397	+/-0.0227	0.0188	+/-0.0227	0.0405	pCi/g					
Niobium-94	U	0.00974	+/-0.0214	0.0185	+/-0.0214	0.0393	pCi/g					
Potassium-40		8.86	+/-1.07	0.130	+/-1.07	0.302	pCi/g					
Radium-226		0.332	+/-0.110	0.0347	+/-0.110	0.0738	pCi/g					
Silver-108m	U	-0.00431	+/-0.019	0.016	+/-0.019	0.034	pCi/g					
Thallium-208		0.132	+/-0.0427	0.0187	+/-0.0427	0.0398	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-011-F
Sample ID: 178924012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-012-F
Sample ID: 178924013
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 24.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.04	+/-0.149	0.0567	+/-0.149	0.120	pCi/g					
Americium-241	U	0.043	+/-0.0966	0.0779	+/-0.0966	0.159	pCi/g					
Bismuth-212		0.829	+/-0.302	0.127	+/-0.302	0.268	pCi/g					
Bismuth-214		0.892	+/-0.0931	0.0287	+/-0.0931	0.0603	pCi/g					
Cesium-134	UI	0.00	+/-0.0367	0.0231	+/-0.0367	0.0482	pCi/g					
Cesium-137		0.234	+/-0.0405	0.0185	+/-0.0405	0.0386	pCi/g					
Cobalt-60	U	-0.00433	+/-0.021	0.0169	+/-0.021	0.0364	pCi/g					
Europium-152	U	-0.0327	+/-0.0553	0.0452	+/-0.0553	0.0936	pCi/g					
Europium-154	U	-0.0046	+/-0.0622	0.0509	+/-0.0622	0.109	pCi/g					
Europium-155	U	0.0247	+/-0.0601	0.0536	+/-0.0601	0.110	pCi/g					
Lead-212		1.10	+/-0.0612	0.0268	+/-0.0612	0.0551	pCi/g					
Lead-214		1.07	+/-0.0974	0.0333	+/-0.0974	0.0688	pCi/g					
Manganese-54	U	0.014	+/-0.0198	0.0175	+/-0.0198	0.0368	pCi/g					
Niobium-94	U	0.00212	+/-0.0183	0.0157	+/-0.0183	0.0329	pCi/g					
Potassium-40		12.7	+/-0.807	0.121	+/-0.807	0.269	pCi/g					
Radium-226		0.892	+/-0.0931	0.0287	+/-0.0931	0.0603	pCi/g					
Silver-108m	U	0.0109	+/-0.0187	0.016	+/-0.0187	0.0332	pCi/g					
Thallium-208		0.353	+/-0.0417	0.0189	+/-0.0417	0.0394	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-012-F
Sample ID: 178924013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-013-F
Sample ID: 178924014
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 4.14%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.684	+/-0.210	0.0731	+/-0.210	0.157	pCi/g		MJH1	01/15/07	1036	602157
Americium-241	U	0.027	+/-0.0345	0.0315	+/-0.0345	0.0648	pCi/g					
Bismuth-212	U	0.250	+/-0.308	0.199	+/-0.308	0.421	pCi/g					
Bismuth-214		0.673	+/-0.121	0.044	+/-0.121	0.0927	pCi/g					
Cesium-134	UI	0.00	+/-0.0502	0.0246	+/-0.0502	0.0524	pCi/g					
Cesium-137	UI	0.00	+/-0.0623	0.0243	+/-0.0623	0.0513	pCi/g					
Cobalt-60	U	0.0051	+/-0.0299	0.0254	+/-0.0299	0.0551	pCi/g					
Europium-152	U	-0.0311	+/-0.0632	0.052	+/-0.0632	0.109	pCi/g					
Europium-154	U	-0.0352	+/-0.0847	0.0683	+/-0.0847	0.148	pCi/g					
Europium-155	U	0.0277	+/-0.0596	0.0516	+/-0.0596	0.107	pCi/g					
Lead-212		0.600	+/-0.0768	0.0415	+/-0.0768	0.0852	pCi/g					
Lead-214		0.566	+/-0.0925	0.0438	+/-0.0925	0.0912	pCi/g					
Manganese-54	U	0.00562	+/-0.0282	0.0239	+/-0.0282	0.0507	pCi/g					
Niobium-94	U	0.0334	+/-0.0416	0.0238	+/-0.0416	0.050	pCi/g					
Potassium-40		12.0	+/-0.928	0.199	+/-0.928	0.441	pCi/g					
Radium-226		0.673	+/-0.121	0.044	+/-0.121	0.0927	pCi/g					
Silver-108m	UI	0.00	+/-0.0317	0.0186	+/-0.0317	0.0392	pCi/g					
Thallium-208		0.277	+/-0.0526	0.024	+/-0.0526	0.0505	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-013-F
Sample ID: 178924014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-014-F
Sample ID: 178924015
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 20.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.33	+/-0.233	0.0644	+/-0.233	0.140	pCi/g		MJH1	01/15/07	1036	602157
Americium-241	U	-0.0292	+/-0.0346	0.0264	+/-0.0346	0.0543	pCi/g					
Bismuth-212		0.786	+/-0.309	0.163	+/-0.309	0.347	pCi/g					
Bismuth-214		0.975	+/-0.122	0.0367	+/-0.122	0.0778	pCi/g					
Cesium-134	UI	0.00	+/-0.0324	0.0287	+/-0.0324	0.0605	pCi/g					
Cesium-137		0.0773	+/-0.0538	0.021	+/-0.0538	0.0445	pCi/g					
Cobalt-60	U	0.0156	+/-0.024	0.0216	+/-0.024	0.0473	pCi/g					
Europium-152	U	0.0122	+/-0.0557	0.0473	+/-0.0557	0.0993	pCi/g					
Europium-154	U	-0.00516	+/-0.0792	0.0658	+/-0.0792	0.143	pCi/g					
Europium-155	U	0.0753	+/-0.0795	0.0489	+/-0.0795	0.101	pCi/g					
Lead-212		1.45	+/-0.0736	0.0252	+/-0.0736	0.0525	pCi/g					
Lead-214		1.14	+/-0.0986	0.0372	+/-0.0986	0.0778	pCi/g					
Manganese-54	U	0.0336	+/-0.0265	0.0241	+/-0.0265	0.051	pCi/g					
Niobium-94	U	0.0209	+/-0.0277	0.0214	+/-0.0277	0.0452	pCi/g					
Potassium-40		11.1	+/-1.00	0.199	+/-1.00	0.439	pCi/g					
Radium-226		0.975	+/-0.122	0.0367	+/-0.122	0.0778	pCi/g					
Silver-108m	U	-0.00725	+/-0.0194	0.0168	+/-0.0194	0.0353	pCi/g					
Thallium-208		0.443	+/-0.0522	0.0194	+/-0.0522	0.0411	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-014-F
Sample ID: 178924015

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

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-015-F
Sample ID: 178924016
Matrix: TS
Collect Date: 03-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 4.23%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.609	+/-0.138	0.0452	+/-0.138	0.0998	pCi/g					
Americium-241	U	-0.026	+/-0.0543	0.042	+/-0.0543	0.0875	pCi/g					
Bismuth-212	U	0.218	+/-0.245	0.124	+/-0.245	0.265	pCi/g					
Bismuth-214		0.460	+/-0.0927	0.0261	+/-0.0927	0.0562	pCi/g					
Cesium-134	UI	0.00	+/-0.0218	0.0181	+/-0.0218	0.039	pCi/g					
Cesium-137		0.0306	+/-0.0293	0.0135	+/-0.0293	0.0292	pCi/g					
Cobalt-60	U	0.00823	+/-0.0173	0.0158	+/-0.0173	0.0351	pCi/g					
Europium-152	U	-0.0447	+/-0.0432	0.0338	+/-0.0432	0.0719	pCi/g					
Europium-154	U	0.0106	+/-0.0537	0.0472	+/-0.0537	0.104	pCi/g					
Europium-155	U	0.011	+/-0.0442	0.0376	+/-0.0442	0.0784	pCi/g					
Lead-212		0.493	+/-0.0628	0.0212	+/-0.0628	0.0444	pCi/g					
Lead-214		0.450	+/-0.0786	0.0266	+/-0.0786	0.0564	pCi/g					
Manganese-54	U	0.00324	+/-0.0158	0.0137	+/-0.0158	0.0298	pCi/g					
Niobium-94	U	0.00577	+/-0.0154	0.0137	+/-0.0154	0.0294	pCi/g					
Potassium-40		10.1	+/-0.991	0.101	+/-0.991	0.238	pCi/g					
Radium-226		0.460	+/-0.0927	0.0261	+/-0.0927	0.0562	pCi/g					
Silver-108m	U	0.00849	+/-0.0224	0.0123	+/-0.0224	0.0263	pCi/g					
Thallium-208		0.193	+/-0.0405	0.0124	+/-0.0405	0.027	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-015-F
Sample ID: 178924016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-016-I
Sample ID: 178924017
Matrix: TS
Collect Date: 05-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 8.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.976	+/-0.207	0.0728	+/-0.207	0.145	pCi/g					
Americium-241	U	0.109	+/-0.0957	0.0791	+/-0.0957	0.158	pCi/g		MJH1	01/15/07	1020	602157
Bismuth-212		0.636	+/-0.350	0.161	+/-0.350	0.322	pCi/g					
Bismuth-214		0.626	+/-0.102	0.0352	+/-0.102	0.0703	pCi/g					
Cesium-134	UI	0.00	+/-0.0396	0.0264	+/-0.0396	0.0528	pCi/g					
Cesium-137	U	0.0244	+/-0.0318	0.0196	+/-0.0318	0.0393	pCi/g					
Cobalt-60	U	0.0053	+/-0.0256	0.022	+/-0.0256	0.044	pCi/g					
Europium-152	U	0.0511	+/-0.081	0.0571	+/-0.081	0.114	pCi/g					
Europium-154	U	0.0196	+/-0.0745	0.0643	+/-0.0745	0.129	pCi/g					
Europium-155	U	0.0385	+/-0.086	0.0586	+/-0.086	0.117	pCi/g					
Lead-212		1.04	+/-0.111	0.0304	+/-0.111	0.0608	pCi/g					
Lead-214		0.641	+/-0.110	0.0379	+/-0.110	0.0758	pCi/g					
Manganese-54	U	0.0215	+/-0.0236	0.0218	+/-0.0236	0.0436	pCi/g					
Niobium-94	U	-0.0148	+/-0.0282	0.0193	+/-0.0282	0.0385	pCi/g					
Potassium-40		13.7	+/-1.30	0.186	+/-1.30	0.373	pCi/g					
Radium-226		0.626	+/-0.102	0.0352	+/-0.102	0.0703	pCi/g					
Silver-108m	U	0.0058	+/-0.0202	0.0177	+/-0.0202	0.0355	pCi/g					
Thallium-208		0.307	+/-0.0525	0.0204	+/-0.0525	0.0408	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-016-I
Sample ID: 178924017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-017-I
Sample ID: 178924018
Matrix: TS
Collect Date: 05-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 11.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.41	+/-0.289	0.114	+/-0.289	0.227	pCi/g		MJH1	01/15/07	1021	602157
Americium-241	U	0.0616	+/-0.0539	0.0382	+/-0.0539	0.0763	pCi/g					
Bismuth-212		0.967	+/-0.508	0.256	+/-0.508	0.512	pCi/g					
Bismuth-214		0.712	+/-0.160	0.055	+/-0.160	0.110	pCi/g					
Cesium-134	UI	0.00	+/-0.0819	0.0408	+/-0.0819	0.0815	pCi/g					
Cesium-137	U	0.0528	+/-0.0463	0.031	+/-0.0463	0.062	pCi/g					
Cobalt-60	U	-0.00308	+/-0.0378	0.0309	+/-0.0378	0.0618	pCi/g					
Europium-152	U	-0.012	+/-0.106	0.0675	+/-0.106	0.135	pCi/g					
Europium-154	U	0.0648	+/-0.124	0.109	+/-0.124	0.218	pCi/g					
Europium-155	U	0.0629	+/-0.0872	0.0666	+/-0.0872	0.133	pCi/g					
Lead-212		1.41	+/-0.152	0.037	+/-0.152	0.074	pCi/g					
Lead-214		0.879	+/-0.150	0.0488	+/-0.150	0.0976	pCi/g					
Manganese-54	U	-0.0185	+/-0.0346	0.028	+/-0.0346	0.0559	pCi/g					
Niobium-94	U	-0.0117	+/-0.0355	0.0299	+/-0.0355	0.0597	pCi/g					
Potassium-40		17.0	+/-1.54	0.291	+/-1.54	0.582	pCi/g					
Radium-226		0.712	+/-0.160	0.055	+/-0.160	0.110	pCi/g					
Silver-108m	U	-0.0114	+/-0.0341	0.0241	+/-0.0341	0.0482	pCi/g					
Thallium-208		0.466	+/-0.0873	0.0279	+/-0.0873	0.0558	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-017-I
Sample ID: 178924018

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

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-018-I
Sample ID: 178924019
Matrix: TS
Collect Date: 09-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 18.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.17	+/-0.253	0.0718	+/-0.253	0.159	pCi/g		MJH1	01/15/07	1037	602157
Americium-241	U	-0.00911	+/-0.0363	0.0312	+/-0.0363	0.0647	pCi/g					
Bismuth-212		0.802	+/-0.340	0.195	+/-0.340	0.419	pCi/g					
Bismuth-214		0.691	+/-0.117	0.0429	+/-0.117	0.0921	pCi/g					
Cesium-134	UI	0.00	+/-0.042	0.0343	+/-0.042	0.073	pCi/g					
Cesium-137	U	0.0388	+/-0.0346	0.0272	+/-0.0346	0.058	pCi/g					
Cobalt-60	U	-0.00287	+/-0.0304	0.0245	+/-0.0304	0.0548	pCi/g					
Europium-152	U	-0.00113	+/-0.0665	0.0509	+/-0.0665	0.108	pCi/g					
Europium-154	U	0.0329	+/-0.0869	0.075	+/-0.0869	0.166	pCi/g					
Europium-155	UI	0.00	+/-0.0967	0.0464	+/-0.0967	0.0967	pCi/g					
Lead-212		0.956	+/-0.0753	0.0266	+/-0.0753	0.0561	pCi/g					
Lead-214		0.801	+/-0.111	0.0399	+/-0.111	0.0845	pCi/g					
Manganese-54	U	-0.0155	+/-0.0279	0.0225	+/-0.0279	0.049	pCi/g					
Niobium-94	U	0.000445	+/-0.025	0.0218	+/-0.025	0.0468	pCi/g					
Potassium-40		13.3	+/-1.14	0.184	+/-1.14	0.428	pCi/g					
Radium-226		0.691	+/-0.117	0.0429	+/-0.117	0.0921	pCi/g					
Silver-108m	U	-0.00981	+/-0.0241	0.0196	+/-0.0241	0.0419	pCi/g					
Thallium-208		0.272	+/-0.0673	0.0233	+/-0.0673	0.0499	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-018-I
Sample ID: 178924019

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

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-019-I
Sample ID: 178924020
Matrix: TS
Collect Date: 09-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 16.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.07	+/-0.169	0.045	+/-0.169	0.0899	pCi/g					
Americium-241	U	0.0953	+/-0.112	0.0909	+/-0.112	0.182	pCi/g					
Bismuth-212		0.690	+/-0.184	0.096	+/-0.184	0.192	pCi/g					
Bismuth-214		0.711	+/-0.094	0.0257	+/-0.094	0.0514	pCi/g					
Cesium-134	UI	0.00	+/-0.0288	0.0176	+/-0.0288	0.0351	pCi/g					
Cesium-137		0.115	+/-0.0304	0.011	+/-0.0304	0.022	pCi/g					
Cobalt-60	U	-0.0131	+/-0.015	0.0116	+/-0.015	0.0231	pCi/g					
Europium-152	U	0.0102	+/-0.0541	0.0364	+/-0.0541	0.0728	pCi/g					
Europium-154	U	-0.044	+/-0.0492	0.0384	+/-0.0492	0.0767	pCi/g					
Europium-155	U	0.0295	+/-0.0619	0.0501	+/-0.0619	0.100	pCi/g					
Lead-212		1.02	+/-0.0942	0.0217	+/-0.0942	0.0433	pCi/g					
Lead-214		0.826	+/-0.0939	0.0259	+/-0.0939	0.0518	pCi/g					
Manganese-54	U	0.00653	+/-0.0177	0.0135	+/-0.0177	0.0269	pCi/g					
Niobium-94	U	0.0121	+/-0.0141	0.0122	+/-0.0141	0.0245	pCi/g					
Potassium-40		12.2	+/-0.941	0.108	+/-0.941	0.215	pCi/g					
Radium-226		0.711	+/-0.094	0.0257	+/-0.094	0.0514	pCi/g					
Silver-108m	U	0.000374	+/-0.0136	0.0117	+/-0.0136	0.0234	pCi/g					
Thallium-208		0.321	+/-0.0428	0.0124	+/-0.0428	0.0249	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-019-I
Sample ID: 178924020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-020-I
Sample ID: 178924021
Matrix: TS
Collect Date: 09-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 24.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.07	+/-0.0943	0.032	+/-0.0943	0.0668	pCi/g					
Americium-241	U	-0.0417	+/-0.0458	0.0393	+/-0.0458	0.0801	pCi/g					
Bismuth-212		0.624	+/-0.197	0.0796	+/-0.197	0.165	pCi/g					
Bismuth-214		0.865	+/-0.0644	0.0194	+/-0.0644	0.040	pCi/g					
Cesium-134	UI	0.00	+/-0.0197	0.0136	+/-0.0197	0.0279	pCi/g					
Cesium-137		0.239	+/-0.0257	0.0117	+/-0.0257	0.0241	pCi/g					
Cobalt-60	U	0.0067	+/-0.0126	0.0108	+/-0.0126	0.0226	pCi/g					
Europium-152	U	-0.00446	+/-0.0321	0.027	+/-0.0321	0.0554	pCi/g					
Europium-154	U	-0.0263	+/-0.0379	0.0304	+/-0.0379	0.0637	pCi/g					
Europium-155	U	0.0436	+/-0.0449	0.0316	+/-0.0449	0.0644	pCi/g					
Lead-212		1.06	+/-0.0436	0.0159	+/-0.0436	0.0324	pCi/g					
Lead-214		0.973	+/-0.0697	0.0193	+/-0.0697	0.0395	pCi/g					
Manganese-54	U	0.0058	+/-0.017	0.00974	+/-0.017	0.0202	pCi/g					
Niobium-94	UI	0.00	+/-0.0262	0.00954	+/-0.0262	0.0197	pCi/g					
Potassium-40		11.2	+/-0.485	0.0921	+/-0.485	0.194	pCi/g					
Radium-226		0.865	+/-0.0644	0.0194	+/-0.0644	0.040	pCi/g					
Silver-108m	U	0.010	+/-0.011	0.00942	+/-0.011	0.0194	pCi/g					
Thallium-208		0.339	+/-0.0254	0.00979	+/-0.0254	0.0202	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-020-I
Sample ID: 178924021

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	---

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-021-I
Sample ID: 178924022
Matrix: TS
Collect Date: 09-JAN-07
Receive Date: 11-JAN-07
Collector: Client
Moisture: 5.03%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.736	+/-0.132	0.0313	+/-0.132	0.0626	pCi/g					
Americium-241	U	0.0317	+/-0.0765	0.0615	+/-0.0765	0.123	pCi/g					
Bismuth-212		0.408	+/-0.126	0.0705	+/-0.126	0.141	pCi/g					
Bismuth-214		0.454	+/-0.0641	0.0173	+/-0.0641	0.0345	pCi/g					
Cesium-134	UI	0.00	+/-0.0156	0.0111	+/-0.0156	0.0223	pCi/g					
Cesium-137	U	0.0178	+/-0.0163	0.0101	+/-0.0163	0.0202	pCi/g					
Cobalt-60	U	0.000921	+/-0.0108	0.00907	+/-0.0108	0.0181	pCi/g					
Europium-152	U	-0.00525	+/-0.0356	0.0254	+/-0.0356	0.0507	pCi/g					
Europium-154	U	0.0194	+/-0.0345	0.0297	+/-0.0345	0.0593	pCi/g					
Europium-155	U	0.0411	+/-0.043	0.0342	+/-0.043	0.0683	pCi/g					
Lead-212		0.663	+/-0.0618	0.0154	+/-0.0618	0.0308	pCi/g					
Lead-214		0.554	+/-0.065	0.019	+/-0.065	0.0381	pCi/g					
Manganese-54	U	0.00518	+/-0.0106	0.00935	+/-0.0106	0.0187	pCi/g					
Niobium-94	U	-0.000892	+/-0.0104	0.00861	+/-0.0104	0.0172	pCi/g					
Potassium-40		11.5	+/-0.805	0.0779	+/-0.805	0.156	pCi/g					
Radium-226		0.454	+/-0.0641	0.0173	+/-0.0641	0.0345	pCi/g					
Silver-108m	U	-0.00378	+/-0.00979	0.00833	+/-0.00979	0.0166	pCi/g					
Thallium-208		0.207	+/-0.0289	0.00879	+/-0.0289	0.0176	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	JMB1	01/11/07	1039	601628

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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

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Certificate of Analysis

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

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

Report Date: January 18, 2007

Client Sample ID: 9539-0001-021-I
Sample ID: 178924022

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	---

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

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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QC Summary

Report Date: January 18, 2007

Page 1 of 12

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 178924

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	601896										
QC1201260243	178924001	DUP									
Americium-241	U	0.00849	U	-0.0257	pCi/g	397		(0% - 100%)	AXA1	01/12/07	19:19
	Uncert:	+/-0.111		+/-0.102							
	TPU:	+/-0.111		+/-0.102							
Curium-242	U	-0.0527	U	0.0116	pCi/g	313		(0% - 100%)			
	Uncert:	+/-0.0421		+/-0.0877							
	TPU:	+/-0.0426		+/-0.0877							
Curium-243/244	U	0.0126	U	0.0634	pCi/g	134		(0% - 100%)			
	Uncert:	+/-0.131		+/-0.166							
	TPU:	+/-0.131		+/-0.166							
QC1201260245	LCS										
Americium-241	13.1			15.2	pCi/g		116	(75%-125%)		01/13/07	08:21
	Uncert:			+/-1.35							
	TPU:			+/-2.27							
Curium-242			U	0.00	pCi/g						
	Uncert:			+/-0.0615							
	TPU:			+/-0.0615							
Curium-243/244	15.8			16.3	pCi/g		103	(75%-125%)			
	Uncert:			+/-1.40							
	TPU:			+/-2.41							
QC1201260242	MB										
Americium-241			U	0.140	pCi/g						
	Uncert:			+/-0.171							
	TPU:			+/-0.172							
Curium-242			U	0.0477	pCi/g						
	Uncert:			+/-0.108							
	TPU:			+/-0.108							
Curium-243/244			U	-0.034	pCi/g						
	Uncert:			+/-0.0876							
	TPU:			+/-0.0877							
QC1201260244	178924001	MS									
Americium-241	13.1	U	0.00849	14.7	pCi/g		112	(75%-125%)		01/13/07	08:21
	Uncert:		+/-0.111	+/-1.29							
	TPU:		+/-0.111	+/-2.17							
Curium-242		U	-0.0527	0.00	pCi/g						
	Uncert:		+/-0.0421	+/-0.0605							
	TPU:		+/-0.0426	+/-0.0605							
Curium-243/244	15.8	U	0.0126	16.0	pCi/g		101	(75%-125%)			
	Uncert:		+/-0.131	+/-1.35							
	TPU:		+/-0.131	+/-2.33							
Batch	601897										
QC1201260247	178924001	DUP									
Plutonium-238	U	0.00119	U	-0.0434	pCi/g	211		(0% - 100%)	AXA1	01/15/07	08:24

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	601897										
Plutonium-239/240	U	Uncert:	+/-0.0649	+/-0.038	pCi/g	118	(0% - 100%)				
		TPU:	+/-0.0649	+/-0.0383							
			-0.0358	-0.139							
		Uncert:	+/-0.0314	+/-0.0982							
		TPU:	+/-0.0317	+/-0.0988							
QC1201260249	LCS										
Plutonium-238			U	0.0605	pCi/g		(75%-125%)			01/12/07	16:14
Plutonium-239/240	12.1	Uncert:		+/-0.104	pCi/g	98	(75%-125%)				
		TPU:		+/-0.105							
				11.9							
		Uncert:		+/-1.17							
		TPU:		+/-1.79							
QC1201260246	MB										
Plutonium-238			U	-0.0184	pCi/g					01/12/07	16:14
Plutonium-239/240	U	Uncert:		+/-0.0544	pCi/g						
		TPU:		+/-0.0544							
				0.0584							
		Uncert:		+/-0.0894							
		TPU:		+/-0.0897							
QC1201260248	178924001	MS									
Plutonium-238		U	0.00119	U	0.0835	pCi/g		(75%-125%)		01/12/07	16:14
Plutonium-239/240	12.1	Uncert:	+/-0.0649	+/-0.102	pCi/g	100	(75%-125%)				
		TPU:	+/-0.0649	+/-0.102							
			-0.0358	12.1							
		Uncert:	+/-0.0314	+/-1.09							
		TPU:	+/-0.0317	+/-1.73							
Batch	601898										
QC1201260251	178924001	DUP									
Plutonium-241		U	-9.26	U	-3.67	pCi/g	0	(0% - 100%)	4XA1	01/16/07	08:00
Plutonium-241	140	Uncert:	+/-9.39	+/-8.83	pCi/g	92	(75%-125%)				
		TPU:	+/-9.39	+/-8.83							
				128							
		Uncert:		+/-12.8							
		TPU:		+/-18.1							
QC1201260250	MB										
Plutonium-241			U	-2.67	pCi/g					01/16/07	07:44
Plutonium-241	140	Uncert:		+/-8.64	pCi/g	108	(75%-125%)				
		TPU:		+/-8.64							
		Uncert:		+/-15.7							
		TPU:		+/-22.3							
QC1201260252	178924001	MS									
Actinium-228		U	-9.26		152	pCi/g				01/15/07	17:26
Rad Gamma Spec											
Batch	602157										
QC1201260864	178924001	DUP									
Actinium-228			0.659	0.550	pCi/g	18	(0% - 100%)	MJH1		01/15/07	17:26
			Uncert:	+/-0.176							
				+/-0.112							
				+/-0.112							

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	602157										
Americium-241	TPU:	+/-0.176									
	U	0.00967	U	-0.0166	pCi/g	756		(0% - 100%)			
	Uncert:	+/-0.0287		+/-0.0637							
Bismuth-212	TPU:	+/-0.0287		+/-0.0637							
		0.628		0.439	pCi/g	36		(0% - 100%)			
	Uncert:	+/-0.290		+/-0.158							
Bismuth-214	TPU:	+/-0.290		+/-0.158							
		0.591		0.524	pCi/g	12		(0% - 100%)			
	Uncert:	+/-0.0888		+/-0.0531							
Cesium-134	TPU:	+/-0.0888		+/-0.0531							
	UI	0.00	UI	0.00	pCi/g	47		(0% - 100%)			
	Uncert:	+/-0.0458		+/-0.0235							
Cesium-137	TPU:	+/-0.0458		+/-0.0235							
		0.167		0.126	pCi/g	28		(0% - 100%)			
	Uncert:	+/-0.0556		+/-0.0319							
Cobalt-60	TPU:	+/-0.0556		+/-0.0319							
	U	-0.00235	U	-0.00219	pCi/g	7		(0% - 100%)			
	Uncert:	+/-0.0253		+/-0.0139							
Europium-152	TPU:	+/-0.0253		+/-0.0139							
	U	-0.0256	U	0.0132	pCi/g	624		(0% - 100%)			
	Uncert:	+/-0.0525		+/-0.0337							
Europium-154	TPU:	+/-0.0525		+/-0.0337							
	U	-0.0453	U	0.00664	pCi/g	269		(0% - 100%)			
	Uncert:	+/-0.0805		+/-0.0441							
Europium-155	TPU:	+/-0.0805		+/-0.0441							
	U	0.029	U	0.0117	pCi/g	85		(0% - 100%)			
	Uncert:	+/-0.0416		+/-0.0362							
Lead-212	TPU:	+/-0.0416		+/-0.0362							
		0.638		0.646	pCi/g	1		(0% - 20%)			
	Uncert:	+/-0.058		+/-0.0452							
Lead-214	TPU:	+/-0.058		+/-0.0452							
		0.715		0.584	pCi/g	20		(0% - 20%)			
	Uncert:	+/-0.0987		+/-0.058							
Manganese-54	TPU:	+/-0.0987		+/-0.058							
	U	-0.00805	U	0.00815	pCi/g	32700		(0% - 100%)			
	Uncert:	+/-0.0216		+/-0.014							
Niobium-94	TPU:	+/-0.0216		+/-0.014							
	U	-0.000198	U	-0.0022	pCi/g	167		(0% - 100%)			
	Uncert:	+/-0.0203		+/-0.0128							
Potassium-40	TPU:	+/-0.0203		+/-0.0128							
		9.53		9.88	pCi/g	4		(0% - 20%)			
	Uncert:	+/-0.860		+/-0.551							
Radium-226	TPU:	+/-0.860		+/-0.551							
		0.591		0.524	pCi/g	12		(0% - 100%)			
	Uncert:	+/-0.0888		+/-0.0531							
Silver-108m	TPU:	+/-0.0888		+/-0.0531							
	U	0.00819	U	0.00692	pCi/g	17		(0% - 100%)			
	Uncert:	+/-0.0187		+/-0.0112							

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	602157										
Thallium-208	TPU:	+/-0.0187		+/-0.0112							
		0.216		0.191	pCi/g	12		(0% - 100%)			
	Uncert:	+/-0.0502		+/-0.0333							
	TPU:	+/-0.0502		+/-0.0333							
QC1201260865 LCS Actinium-228			U	0.102	pCi/g					01/15/07	10:39
	Uncert:			+/-0.395							
	TPU:			+/-0.395							
Americium-241	23.4			25.4	pCi/g		108	(75%-125%)			
	Uncert:			+/-1.03							
	TPU:			+/-1.03							
Bismuth-212			U	0.295	pCi/g						
	Uncert:			+/-0.629							
	TPU:			+/-0.629							
Bismuth-214			U	0.114	pCi/g						
	Uncert:			+/-0.150							
	TPU:			+/-0.150							
Cesium-134			U	0.0849	pCi/g						
	Uncert:			+/-0.0972							
	TPU:			+/-0.0972							
Cesium-137	9.50			10.3	pCi/g		108	(75%-125%)			
	Uncert:			+/-0.359							
	TPU:			+/-0.359							
Cobalt-60	13.8			14.7	pCi/g		107	(75%-125%)			
	Uncert:			+/-0.478							
	TPU:			+/-0.478							
Europium-152			U	-0.124	pCi/g						
	Uncert:			+/-0.200							
	TPU:			+/-0.200							
Europium-154			U	0.165	pCi/g						
	Uncert:			+/-0.191							
	TPU:			+/-0.191							
Europium-155			U	0.129	pCi/g						
	Uncert:			+/-0.219							
	TPU:			+/-0.219							
Lead-212			U	0.147	pCi/g						
	Uncert:			+/-0.109							
	TPU:			+/-0.109							
Lead-214			U	-0.147	pCi/g						
	Uncert:			+/-0.148							
	TPU:			+/-0.148							
Manganese-54			U	-0.028	pCi/g						
	Uncert:			+/-0.0887							
	TPU:			+/-0.0887							
Niobium-94			U	-0.0267	pCi/g						
	Uncert:			+/-0.0741							
	TPU:			+/-0.0741							
Potassium-40			U	0.843	pCi/g						

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	602157									
		Uncert:	+/-0.652							
		TPU:	+/-0.652							
Radium-226		U	0.114	pCi/g			(75%-125%)			
		Uncert:	+/-0.150							
		TPU:	+/-0.150							
Silver-108m		U	-0.00197	pCi/g						
		Uncert:	+/-0.0772							
		TPU:	+/-0.0772							
Thallium-208		U	0.0495	pCi/g						
		Uncert:	+/-0.0754							
		TPU:	+/-0.0754							
QC1201260863 MB										
Actinium-228		U	0.0106	pCi/g					01/15/07	11:26
		Uncert:	+/-0.0373							
		TPU:	+/-0.0373							
Americium-241		U	0.00245	pCi/g						
		Uncert:	+/-0.0253							
		TPU:	+/-0.0253							
Bismuth-212		U	0.046	pCi/g						
		Uncert:	+/-0.0975							
		TPU:	+/-0.0975							
Bismuth-214		U	0.00958	pCi/g						
		Uncert:	+/-0.0573							
		TPU:	+/-0.0573							
Cesium-134		U	-0.00417	pCi/g						
		Uncert:	+/-0.0101							
		TPU:	+/-0.0101							
Cesium-137		U	0.0007	pCi/g						
		Uncert:	+/-0.0108							
		TPU:	+/-0.0108							
Cobalt-60		U	0.00945	pCi/g						
		Uncert:	+/-0.00972							
		TPU:	+/-0.00972							
Europium-152		U	-0.0285	pCi/g						
		Uncert:	+/-0.0328							
		TPU:	+/-0.0328							
Europium-154		U	-0.0105	pCi/g						
		Uncert:	+/-0.0292							
		TPU:	+/-0.0292							
Europium-155		U	0.00356	pCi/g						
		Uncert:	+/-0.0241							
		TPU:	+/-0.0241							
Lead-212		U	0.0291	pCi/g						
		Uncert:	+/-0.0396							
		TPU:	+/-0.0396							
Lead-214		U	0.0155	pCi/g						
		Uncert:	+/-0.0227							
		TPU:	+/-0.0227							

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	602157										
Manganese-54			U	-0.00175	pCi/g						
	Uncert:			+/-0.0108							
	TPU:			+/-0.0108							
Niobium-94			U	0.0151	pCi/g						
	Uncert:			+/-0.0128							
	TPU:			+/-0.0128							
Potassium-40			U	0.107	pCi/g						
	Uncert:			+/-0.114							
	TPU:			+/-0.114							
Radium-226			U	0.00958	pCi/g						
	Uncert:			+/-0.0573							
	TPU:			+/-0.0573							
Silver-108m			U	0.007	pCi/g						
	Uncert:			+/-0.0104							
	TPU:			+/-0.0104							
Thallium-208			U	0.0181	pCi/g						
	Uncert:			+/-0.0119							
	TPU:			+/-0.0119							
Batch	602159										
QC1201260867 178923021 DUP											
Actinium-228		0.470		0.412	pCi/g	13		(0% - 100%)	MJH1	01/15/07	18:31
	Uncert:	+/-0.112		+/-0.104							
	TPU:	+/-0.112		+/-0.104							
Americium-241	U	-1.790E-05	U	-0.00479	pCi/g	199		(0% - 100%)			
	Uncert:	+/-0.0485		+/-0.0184							
	TPU:	+/-0.0485		+/-0.0184							
Bismuth-212		0.270		0.392	pCi/g	37		(0% - 100%)			
	Uncert:	+/-0.141		+/-0.254							
	TPU:	+/-0.141		+/-0.254							
Bismuth-214		0.324		0.330	pCi/g	2		(0% - 100%)			
	Uncert:	+/-0.0574		+/-0.0623							
	TPU:	+/-0.0574		+/-0.0623							
Cesium-134	UI	0.00	UI	0.00	pCi/g	42		(0% - 100%)			
	Uncert:	+/-0.0199		+/-0.0157							
	TPU:	+/-0.0199		+/-0.0157							
Cesium-137	U	0.0185	U	0.00344	pCi/g	137		(0% - 100%)			
	Uncert:	+/-0.0166		+/-0.0146							
	TPU:	+/-0.0166		+/-0.0146							
Cobalt-60	U	0.000568	U	0.00334	pCi/g	142		(0% - 100%)			
	Uncert:	+/-0.0102		+/-0.0153							
	TPU:	+/-0.0102		+/-0.0153							
Europium-152	U	-0.00941	U	-0.0217	pCi/g	79		(0% - 100%)			
	Uncert:	+/-0.0256		+/-0.0346							
	TPU:	+/-0.0256		+/-0.0346							
Europium-154	U	0.0161	U	-0.0145	pCi/g	3690		(0% - 100%)			
	Uncert:	+/-0.0306		+/-0.0467							
	TPU:	+/-0.0306		+/-0.0467							
Europium-155	U	0.0335	U	0.00826	pCi/g	121		(0% - 100%)			

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	602159										
Lead-212	Uncert:			+/-0.0281							
	TPU:			+/-0.0281							
				0.465							
Lead-214	Uncert:			+/-0.0462							
	TPU:			+/-0.0462							
				0.359							
Manganese-54	Uncert:			+/-0.0537							
	TPU:			+/-0.0537							
				0.00492							
Niobium-94	Uncert:			+/-0.0118							
	TPU:			+/-0.0118							
				0.000641							
Potassium-40	Uncert:			+/-0.0103							
	TPU:			+/-0.0103							
				7.08							
Radium-226	Uncert:			+/-0.627							
	TPU:			+/-0.627							
				0.324							
Silver-108m	Uncert:			+/-0.0574							
	TPU:			+/-0.0574							
				-0.00383							
Thallium-208	Uncert:			+/-0.00875							
	TPU:			+/-0.00875							
				0.154							
Actinium-228	Uncert:			+/-0.0276							
	TPU:			+/-0.0276							
				0.126							
Americium-241	Uncert:			+/-0.177							
	TPU:			+/-0.177							
				24.7							
Bismuth-212	Uncert:			+/-0.203							
	TPU:			+/-0.203							
				-0.12							
Bismuth-214	Uncert:			+/-0.296							
	TPU:			+/-0.296							
				0.00592							
Cesium-134	Uncert:			+/-0.066							
	TPU:			+/-0.066							
				0.0198							
Cesium-137	Uncert:			+/-0.045							
	TPU:			+/-0.045							
				10.2							
Cobalt-60	Uncert:			+/-0.160							
	TPU:			+/-0.160							
				14.6							
	Uncert:			+/-0.218							
	TPU:			+/-0.218							

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QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	602159									
Europium-152		U	-0.0332	pCi/g						
	Uncert:		+/-0.0834							
	TPU:		+/-0.0834							
Europium-154		U	-0.00106	pCi/g						
	Uncert:		+/-0.0791							
	TPU:		+/-0.0791							
Europium-155		U	0.00685	pCi/g						
	Uncert:		+/-0.0603							
	TPU:		+/-0.0603							
Lead-212		U	0.00459	pCi/g						
	Uncert:		+/-0.0482							
	TPU:		+/-0.0482							
Lead-214		U	0.0952	pCi/g						
	Uncert:		+/-0.0608							
	TPU:		+/-0.0608							
Manganese-54		U	-0.0315	pCi/g						
	Uncert:		+/-0.0432							
	TPU:		+/-0.0432							
Niobium-94		U	-0.00549	pCi/g						
	Uncert:		+/-0.0342							
	TPU:		+/-0.0342							
Potassium-40		U	0.0853	pCi/g						
	Uncert:		+/-0.475							
	TPU:		+/-0.475							
Radium-226		U	0.00592	pCi/g			(75%-125%)			
	Uncert:		+/-0.066							
	TPU:		+/-0.066							
Silver-108m		U	0.0179	pCi/g						
	Uncert:		+/-0.0323							
	TPU:		+/-0.0323							
Thallium-208		U	0.0314	pCi/g						
	Uncert:		+/-0.0343							
	TPU:		+/-0.0343							
QC1201260866 MB										
Actinium-228		U	0.025	pCi/g					01/15/07	18:30
	Uncert:		+/-0.0286							
	TPU:		+/-0.0286							
Americium-241		U	-0.102	pCi/g						
	Uncert:		+/-0.0344							
	TPU:		+/-0.0344							
Bismuth-212		U	0.0447	pCi/g						
	Uncert:		+/-0.0589							
	TPU:		+/-0.0589							
Bismuth-214		UI	0.00	pCi/g						
	Uncert:		+/-0.0176							
	TPU:		+/-0.0176							
Cesium-134		U	0.00274	pCi/g						
	Uncert:		+/-0.00793							

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	602159										
Cesium-137	TPU:			+/-0.00793							
			U	0.00225	pCi/g						
	Uncert:			+/-0.00842							
Cobalt-60	TPU:			+/-0.00842							
			U	-0.00244	pCi/g						
	Uncert:			+/-0.00918							
Europium-152	TPU:			+/-0.00918							
			U	0.00949	pCi/g						
	Uncert:			+/-0.0225							
Europium-154	TPU:			+/-0.0225							
			U	-0.00214	pCi/g						
	Uncert:			+/-0.0215							
Europium-155	TPU:			+/-0.0215							
			U	-0.0128	pCi/g						
	Uncert:			+/-0.0199							
Lead-212	TPU:			+/-0.0199							
			UI	0.00	pCi/g						
	Uncert:			+/-0.013							
Lead-214	TPU:			+/-0.013							
			U	0.000666	pCi/g						
	Uncert:			+/-0.0262							
Manganese-54	TPU:			+/-0.0262							
			U	0.00102	pCi/g						
	Uncert:			+/-0.00755							
Niobium-94	TPU:			+/-0.00755							
			U	0.00487	pCi/g						
	Uncert:			+/-0.00745							
Potassium-40	TPU:			+/-0.00745							
			UI	0.00	pCi/g						
	Uncert:			+/-0.0986							
Radium-226	TPU:			+/-0.0986							
			UI	0.00	pCi/g						
	Uncert:			+/-0.0176							
Silver-108m	TPU:			+/-0.0176							
			U	-0.0072	pCi/g						
	Uncert:			+/-0.00721							
Thallium-208	TPU:			+/-0.00721							
			U	0.00917	pCi/g						
	Uncert:			+/-0.0149							
	TPU:			+/-0.0149							
Rad Gas Flow											
Batch	601901										
QC1201260262	178924001	DUP									
Strontium-90			U	0.00386	U	0.0113	pCi/g	0	(0% - 100%) KSD1	01/15/07	22:58
			Uncert:	+/-0.0267		+/-0.0197					
			TPU:	+/-0.0267		+/-0.0197					
QC1201260264	LCS										
Strontium-90			1.85			2.01	pCi/g	109	(75%-125%)	01/15/07	18:32

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	601901										
		Uncert:		+/-0.194							
		TPU:		+/-0.232							
QC1201260261 MB											
Strontium-90			U	-0.00867	pCi/g					01/15/07	22:58
		Uncert:		+/-0.0196							
		TPU:		+/-0.0196							
QC1201260263 178924001 MS											
Strontium-90	1.86	U	0.00386	1.80	pCi/g		97	(75%-125%)		01/15/07	18:32
		Uncert:	+/-0.0267	+/-0.190							
		TPU:	+/-0.0267	+/-0.208							
Rad Liquid Scintillation											
Batch	601907										
QC1201260280 178924001 DUP											
Nickel-63		U	0.00	-4.81	pCi/g	0		(0% - 100%) KXR1		01/15/07	11:24
		Uncert:	+/-9.32	+/-8.79							
		TPU:	+/-9.32	+/-8.79							
QC1201260282 LCS											
Nickel-63	572			483	pCi/g		85	(75%-125%)		01/15/07	11:57
		Uncert:		+/-24.0							
		TPU:		+/-29.7							
QC1201260279 MB											
Nickel-63		U		-1.12	pCi/g					01/15/07	11:08
		Uncert:		+/-9.33							
		TPU:		+/-9.33							
QC1201260281 178924001 MS											
Nickel-63	572	U	0.00	530	pCi/g		93	(75%-125%)		01/15/07	11:41
		Uncert:	+/-9.32	+/-26.8							
		TPU:	+/-9.32	+/-33.0							
Batch	601908										
QC1201260284 178924001 DUP											
Technetium-99			0.387	0.311	pCi/g	22		(0% - 100%) MXP1		01/17/07	15:18
		Uncert:	+/-0.187	+/-0.193							
		TPU:	+/-0.188	+/-0.193							
QC1201260286 LCS											
Technetium-99	14.3			14.0	pCi/g		98	(75%-125%)		01/17/07	16:52
		Uncert:		+/-0.331							
		TPU:		+/-0.470							
QC1201260283 MB											
Technetium-99		U		-0.00407	pCi/g					01/17/07	14:31
		Uncert:		+/-0.154							
		TPU:		+/-0.154							
QC1201260285 178924001 MS											
Technetium-99	14.8		0.387	14.8	pCi/g		97	(75%-125%)		01/17/07	16:05
		Uncert:	+/-0.187	+/-0.370							
		TPU:	+/-0.188	+/-0.512							
Batch	601909										
QC1201260288 178923010 DUP											
Tritium		U	0.425	1.18	pCi/g	0		(0% - 100%) MXP1		01/15/07	17:06

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Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation												
Batch	601909											
		Uncert:		+/-1.30	+/-1.38							
		TPU:		+/-1.30	+/-1.38							
QC1201260290	LCS											
Tritium		8.17			6.75	pCi/g		83	(75%-125%)		01/15/07	18:10
		Uncert:			+/-1.04							
		TPU:			+/-1.05							
QC1201260287	MB											
Tritium				U	0.265	pCi/g					01/15/07	16:35
		Uncert:			+/-0.647							
		TPU:			+/-0.647							
QC1201260289	178923010	MS										
Tritium		8.31	U	0.425	7.56	pCi/g		91	(75%-125%)		01/15/07	17:38
		Uncert:		+/-1.30	+/-1.81							
		TPU:		+/-1.30	+/-1.81							
Batch	601910											
QC1201260292	178924001	DUP										
Carbon-14			U	-0.00673	U	-0.0176	pCi/g	0	(0% - 100%)	MXP1	01/15/07	20:52
		Uncert:		+/-0.119		+/-0.116						
		TPU:		+/-0.119		+/-0.116						
QC1201260294	LCS											
Carbon-14		7.16			7.18	pCi/g		100	(75%-125%)		01/15/07	23:00
		Uncert:			+/-0.216							
		TPU:			+/-0.243							
QC1201260291	MB											
Carbon-14				U	-0.0566	pCi/g					01/15/07	19:48
		Uncert:			+/-0.115							
		TPU:			+/-0.115							
QC1201260293	178924001	MS										
Carbon-14		15.8	U	-0.00673	14.9	pCi/g		94	(75%-125%)		01/16/07	08:43
		Uncert:		+/-0.119	+/-0.928							
		TPU:		+/-0.119	+/-0.957							
Batch	602972											
QC1201262580	178924001	DUP										
Iron-55			U	-17.2	U	-26.7	pCi/g	0	(0% - 100%)	MXP1	01/18/07	09:26
		Uncert:		+/-28.4		+/-23.0						
		TPU:		+/-28.4		+/-23.0						
QC1201262582	LCS											
Iron-55		799			795	pCi/g		100	(75%-125%)		01/18/07	09:59
		Uncert:			+/-66.3							
		TPU:			+/-87.8							
QC1201262579	MB											
Iron-55				U	31.7	pCi/g					01/18/07	09:09
		Uncert:			+/-37.6							
		TPU:			+/-37.7							
QC1201262581	178924001	MS										
Iron-55		624	U	-17.2	546	pCi/g		87	(75%-125%)		01/18/07	09:42
		Uncert:		+/-28.4	+/-48.4							
		TPU:		+/-28.4	+/-63.7							

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QC Summary

Workorder: 178924

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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Notes:

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < 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
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

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

** Indicates analyte is a surrogate compound.

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

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

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

ISFSI HAUL ROAD (NORTHERN SECTION)

SURVEY UNIT 9539-0001

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

ISFSI HAUL ROAD (NORTHERN SECTION)
SURVEY UNIT 9539-0001

RELEASE RECORD

**ATTACHMENT 4A
(PRELIMINARY DATA REVIEW)**

ISFSI HAUL ROAD (NORTH SECTION)
SURVEY UNIT 9539-0001

PRELIMINARY DATA ASSESSMENT

RELEASE RECORD
Attachment 4

Survey Unit: 9539-0001
Area Description ISFSI Haul Road (north section)
Classification 2
Survey Media Surface Soils
Type of Survey Final Status Survey
Number of Measurements 15 Static, 8 Investigative

**STATISTICS on TOTAL
POPULATION**

	Cs-137	Co-60
DCGL_{op} (pCi/g):	5.38E+00	2.59E+00
Minimum Value:	-4.03E-03	-1.31E-02
Maximum Value:	2.39E-01	4.59E-02
Mean:	7.60E-02	6.45E-03
Median:	4.58E-02	4.68E-03
Standard Deviation:	7.68E-02	1.33E-02

**STATISTICS on NON-
PARAMETRIC POPULATION**

	Cs-137	Co-60
DCGL_{op} (pCi/g):	5.38E+00	2.59E+00
Minimum Value:	-4.03E-03	-8.86E-03
Maximum Value:	2.34E-01	4.59E-02
Mean:	6.91E-02	8.74E-03
Median:	3.76E-02	5.10E-03
Standard Deviation:	7.64E-02	1.45E-02

Sample ID	GPS Coordinates		Cs-137				Co-60				Fraction of DCGL
			Result	2σ	MDA	Identified	Result	2σ	MDA	Identified	
	North	East	(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		
9539-0001-001F	236053.33	669498.22	1.67E-01	0.056	3.84E-02	+	-2.35E-03	0.025	4.61E-02		0.03
9539-0001-002F	235977.12	669630.22	-2.12E-03	0.022	4.13E-02		-8.86E-03	0.030	4.48E-02		0.00
9539-0001-003F	235900.91	669762.21	1.74E-01	0.031	2.67E-02	+	-4.43E-03	0.017	2.81E-02		0.03
9539-0001-004F	235900.91	670202.21	3.66E-02	0.019	2.92E-02	+	2.81E-02	0.019	4.36E-02	+	0.02
9539-0001-005F	235900.91	670290.21	-3.46E-03	0.014	2.54E-02		9.64E-03	0.044	2.69E-02		0.00

ISFSI HAUL ROAD (NORTH SECTION)
SURVEY UNIT 9539-0001

PRELIMINARY DATA ASSESSMENT

RELEASE RECORD
Attachment 4

Sample ID	GPS Coordinates		Cs-137				Co-60				Fraction of DCGL
	North	East	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	
9539-0001-006F	235900.91	670378.21	-3.05E-04	0.011	2.01E-02		4.13E-03	0.012	2.27E-02		0.00
9539-0001-007F	235900.91	670466.20	5.79E-02	0.051	3.85E-02	+	1.76E-02	0.022	4.56E-02		0.02
9539-0001-008F	235900.91	670554.20	1.34E-01	0.052	4.74E-02	+	1.65E-02	0.025	4.91E-02		0.03
9539-0001-009F	235824.70	669894.21	9.71E-02	0.037	2.85E-02	+	4.59E-02	0.030	3.06E-02	+	0.04
9539-0001-010F	235824.70	669982.21	3.76E-02	0.016	1.58E-02	+	4.25E-03	0.010	1.92E-02		0.01
9539-0001-011F	235824.70	670686.20	-4.03E-03	0.021	3.73E-02		-4.03E-03	0.021	3.73E-02		0.00
9539-0001-012F	235824.70	670774.20	2.34E-01	0.041	3.86E-02	+	-4.33E-03	0.021	3.64E-02		0.04
9539-0001-013F	235748.49	670906.20	0.00E+00	0.062	5.13E-02		5.10E-03	0.030	5.51E-02		0.00
9539-0001-014F	235748.49	670994.20	7.73E-02	0.054	4.45E-02	+	1.56E-02	0.024	4.73E-02		0.02
9539-0001-015F	235672.28	671126.19	3.06E-02	0.029	2.92E-02	+	8.23E-03	0.017	3.51E-02		0.01
9539-0001-003FS	235900.91	669762.21	1.48E-01	0.047	3.66E-02	+	1.69E-02	0.023	4.45E-02		0.03
9539-0001-016I	235877.73	669797.44	2.44E-02	0.032	3.93E-02		5.30E-03	0.026	4.40E-02		0.01
9539-0001-017I	235874.61	669795.73	5.28E-02	0.046	6.20E-02	+	-3.08E-03	0.038	6.18E-02		0.01
9539-0001-018I	235919.51	670297.22	3.88E-02	0.035	5.80E-02	+	-2.87E-03	0.030	5.48E-02		0.01
9539-0001-019I	235917.66	670343.66	1.15E-01	0.030	2.20E-02	+	-1.31E-02	0.015	2.31E-02		0.02
9539-0001-020I	235878.32	670406.99	2.39E-01	0.026	2.41E-02	+	6.70E-03	0.013	2.26E-02		0.05
9539-0001-021I	235687.97	671063.09	1.78E-02	0.016	2.02E-02	+	9.21E-04	0.011	1.81E-02		0.00

ISFSI HAUL ROAD (NORTHERN SECTION)

SURVEY UNIT 9539-0001

RELEASE RECORD

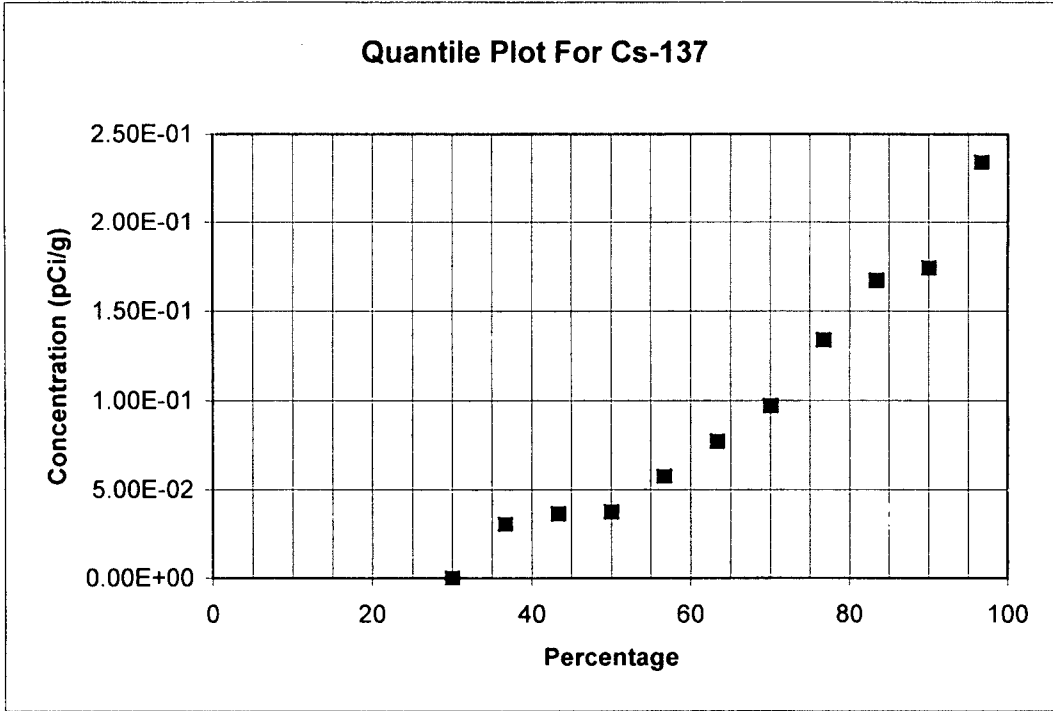
**ATTACHMENT 4B
(GRAPHICAL REPRESENTATION OF
DATA)**

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9539-0001

Survey Unit Name: ISFSI Haul Road (north section)

Mean: 6.91E-02 pCi/g



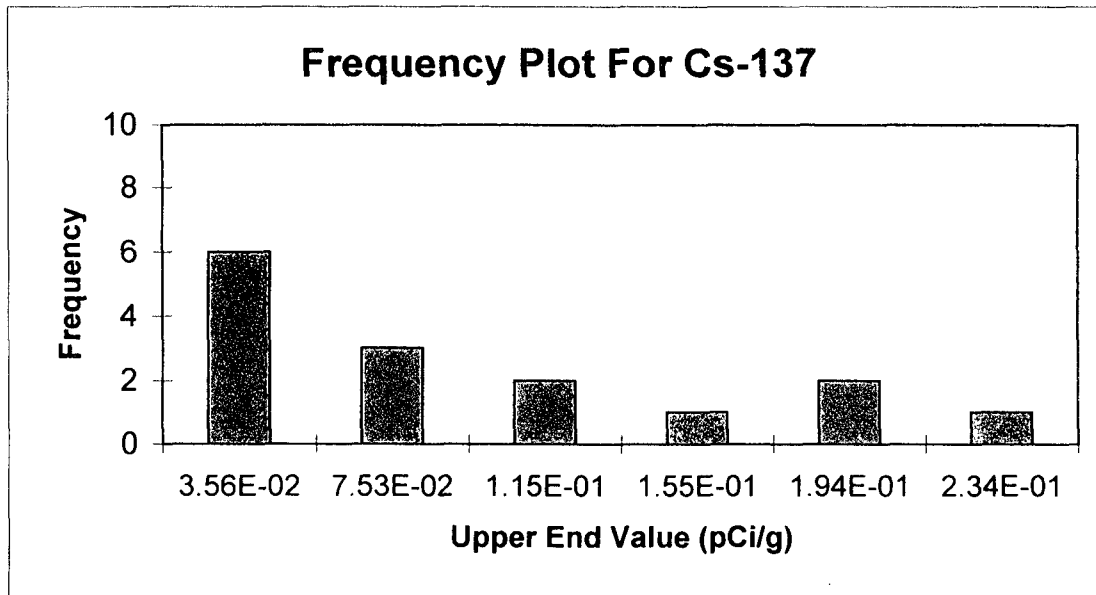
Cs-137	Rank	Percentage
-4.03E-03	1	3.3%
-3.46E-03	2	10.0%
-2.12E-03	3	16.7%
-3.05E-04	4	23.3%
0.00E+00	5	30.0%
3.06E-02	6	36.7%
3.66E-02	7	43.3%
3.76E-02	8	50.0%
5.79E-02	9	56.7%
7.73E-02	10	63.3%
9.71E-02	11	70.0%
1.34E-01	12	76.7%
1.67E-01	13	83.3%
1.74E-01	14	90.0%
2.34E-01	15	96.7%

[Signature] D. WOJTKOWIAK 1/23/07
Submitted by/Date

[Signature] R. MASSERILL 1/23/07
Reviewed by/Date

FREQUENCY PLOT FOR CESIUM-137

Survey Unit: 9539-0001
Survey Unit Name: ISFSI Haul Road (north section)
Mean: 6.91E-02 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
3.56E-02	6	40%
7.53E-02	3	20%
1.15E-01	2	13%
1.55E-01	1	7%
1.94E-01	2	13%
2.34E-01	1	7%
Total:	15	100%

Submitted by/Date

D. WORTKOWIAK 1/23/07

Reviewed by/Date

R. Masserilli 1/23/07

ISFSI HAUL ROAD (NORTHERN SECTION)

SURVEY UNIT 9539-0001

RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet for Multiple Radionuclides

Survey Area Number: 9539		Survey Unit Number: 0001		WPIR #: 2006-0048		
Survey Area Name: ISFSI Haul Road (north section)		Classification: 2	TYPE I (α error): 0.05	N: 15		
Radionuclides:	1 st Radionuclide Cs-137	2 nd Radionuclide Co-60	3 rd Radionuclide	4 th Radionuclide		
DCGL:	5.38E+00	2.59E+00				
Results 1 st Radionuclide (pCi/g)	Results 2 nd Radionuclide (pCi/g)	Results 3 rd Radionuclide (pCi/g)	Results 4 th Radionuclide (pCi/g)	Weighted Sum (W _s)	1-W _s	Sign
1.67E-01	-2.35E-03			0.03	0.97	+1
-2.12E-03	-8.86E-03			0.00	1.00	+1
1.74E-01	-4.43E-03			0.03	0.97	+1
3.66E-02	2.81E-02			0.02	0.98	+1
-3.46E-03	9.64E-03			0.00	1.00	+1
-3.05E-04	4.13E-03			0.00	1.00	+1
5.79E-02	1.76E-02			0.02	0.98	+1
1.34E-01	1.65E-02			0.03	0.97	+1
9.71E-02	4.59E-02			0.04	0.96	+1
3.76E-02	4.25E-03			0.01	0.99	+1
-4.03E-03	-4.03E-03			0.00	1.00	+1
2.34E-01	-4.33E-03			0.04	0.96	+1
0.00E+00	5.10E-03			0.00	1.00	+1
7.73E-02	1.56E-02			0.02	0.98	+1
3.06E-02	8.23E-03			0.01	0.99	+1
Number of positive differences (S+)						15

Critical Value 11

Survey Unit Meets the Acceptance Criteria

Performed by: David Wojtkowiak

Date: 1/23/2007

Independent Review by: R. Massengill

Date: 1/23/07

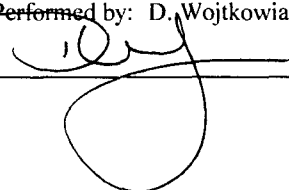
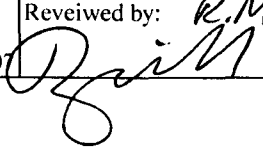
ISFSI HAUL ROAD (NORTHERN SECTION)

SURVEY UNIT 9539-0001

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

Split Sample Assessment Form

Survey Area #:	9539	Survey Unit #	0001	Survey Unit Name:	ISFSI Haul Road (north section)															
Sample Plan or WPIR#:	2006-0048				SML#:	9539-0001-003														
Sample Description: Comparison of split samples collected from sample measurement location #3 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9539-0001-003F, the comparison sample was 9539-0001-003FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	1.74E-01	0.016	11	0.6 - 1.66	1.48E-01	0.023	0.85	Y												
Comments/Corrective Actions: None					Table is provided to show acceptance criteria used to assess split samples. <table> <tr> <td><u>Resolution</u></td> <td><u>Agreement Range</u></td> </tr> <tr> <td>4 - 7</td> <td>0.5 - 2.0</td> </tr> <tr> <td>8 - 15</td> <td>0.6 - 1.66</td> </tr> <tr> <td>16 - 50</td> <td>0.75 - 1.33</td> </tr> <tr> <td>51 - 200</td> <td>0.80 - 1.25</td> </tr> <tr> <td>>200</td> <td>0.85 - 1.18</td> </tr> </table>				<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
<u>Resolution</u>	<u>Agreement Range</u>																			
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed by: D. Wojtkowiak	Date:	Reveiwed by: R. Massogalli	Date:																	
	1/23/2007		1/23/07																	

ISFSI HAUL ROAD (NORTHERN SECTION)

SURVEY UNIT 9539-0001

RELEASE RECORD

ATTACHMENT 4E
(COMPASS DQA WITH POWER CURVE)



DQA Surface Soil Report

Assessment Summary

Site:	9539		
Planner(s):	Wojo		
Survey Unit Name:	9539-0001a		
Report Number:	1		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	Reject Null Hypothesis (Survey Unit PASSES)		

Retrospective Power Curve

