



Final Status Survey Final Report Phase VII

**Appendix A1
Survey Unit Release Record
9302-0000, Northwest Protected Area
Grounds**

May 2007



CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9302-0000, is an open land surface soil survey area located in the northwestern portion of the former protected area and outside of the former Radiologically Controlled Area (RCA). Survey Unit 9302-0000 is designated as Final Status Survey (FSS) Class 3 and consists of approximately three thousand four hundred and ninety (3,490) square meters of open land and is located approximately one thousand one hundred and twenty-five (1,125) feet from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The site benchmark is based on the Connecticut State Plane System North American Datum (NAD) 1927 (Northing 237370.20, Easting 667394.51). The topography is fairly level throughout Survey Area 9302 with a slight slope from east to west, toward the Connecticut River. This survey unit is bounded on the north (plant north is oriented by the general north to south flow of the Connecticut River) by Survey Unit 9514-0000, a Class 3 survey unit, on the east by Survey Unit 9313-0000, a Class 2 survey unit, on the south by 9306-0000 and 9304-0001, both Class 2 survey units and on the west by 9512-0000, a Class 3 survey unit.

The reference coordinates associated with this survey unit are E002 through E006 by S062 through S067 (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 9302-0000 consisted of:

- a) A review of the 10CFR50.75 (g) (1) database,
- b) A review of the "*Initial Characterization Report*" and the "*Historic Site Assessment Supplement*,"
- c) Historic and current survey records review,
- d) Visual inspections and a "walk-down."

The Historical Site Assessment (HSA) and Supplement, as well as, other historical documents (e.g., the 10CFR50.75(g)(1) files) identify a number of events that may have impacted this survey area.

- a. ACR# 97-1055-Floor monitor identified three (3) small radioactive spots embedded in the asphalt north of the Turbine Building roll-up doors, east of GS-1 and inside the Turbine Building.

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- b. CR# 98-0992-During a clean-up outside the Radiological Control Area (RCA), sand was inadvertently scooped up and placed in a dumpster. Follow-up analysis indicated that the sand contained low levels of radioactive material above the environmental release levels.
- c. CR# 02-0037-A mop head containing licensed radioactive material was found in the industrial area trash.
- d. CR# 03-0450-Fixed contamination (3,400 ccpm) was found in the asphalt outside the North RCA gate.
- e. CR# 03-0562-Radioactive material was found at GS-1.
- f. CR# 05-0509-Several Barrels were identified during excavation of the southwest portion of the former Service Building.
- g. CR# 05-0579-Spill at Chemistry trailer.
- h. CR# 05-0736-The north waste storage tent area was leaking through the north berm.

The radiological assessments and characterization surveys in this area to support decommissioning activities commenced in 2004 and continued through 2006 as work progressed. Sampling was performed in the footprints of the PBX Utilities and Commodities Tent or the location of the Former ADMREC Buildings (numbers 201, 134 & 180). Soil samples were analyzed at the on-site laboratory by Gamma Spectroscopic Analysis. A total of fourteen (14) demolition support or characterization samples were identified from this survey area. All of these samples were utilized to determine both the radionuclide(s) of concern and the standard deviation of the sample population for FSS plan development.

Cs-137 and Co-60 were positively identified (i.e. a result greater than two (2) standard deviations uncertainty) in eight (8) of the fourteen (14) samples in concentrations up to 0.6% of the Operational Derived Concentration Guideline Level (DCGL) when incorporating the "sum of fractions". Therefore, both Cs-137 and Co-60 are both identified as radionuclides of concern for FSS. Based on the lack of evidence in the HSA and the sample results from adjacent survey areas, HTD radionuclides were de-selected as radionuclides of concern for this FSS plan. A summary of the demolition support and surface characterization sample results are provided in Table 1.

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Table 1 - Summary of "as-left" Post Remediation and Characterization Sample Results

Parameter	Cs-137	Co-60
Operational Soil Derived Concentration Guideline Level (DCGL) (pCi/g) :	4.75E+00	2.29E+00
Minimum Value:	-2.28E-03	-1.05E-02
Maximum Value:	9.11E-02	9.38E-02
Mean:	1.55E-02	8.64E-03
Median:	1.86E-03	-4.20E-04
Standard Deviation:	5.16E-02	5.24E-02

The FSS Engineer performed a visual inspection and walk-down on October 31, 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 and future 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 at levels approaching a small fraction of the DCGLs, justifying a final survey unit classification of Class 3 (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.

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The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9302-0000 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.

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. CY memo ISC 06-024 states that Survey Area 9302 is affected by existing groundwater and is also considered impacted by future groundwater radioactive contamination, as there are concrete foundations or footings remaining within the groundwater saturated zone in the area.

Therefore, the dose contribution from existing groundwater in Survey Unit 9302-0000 is bounded by two (2) mrem/yr TEDE and the dose contribution from future groundwater, the third dose component, is also two (2) mrem/yr TEDE.

Equation 2

$$19 \text{ mrem/yr}_{\text{Total}} = 15 \text{ mrem/yr}_{\text{Soil}} + 2 \text{ mrem/yr}_{\text{Existing GW}} + 2 \text{ mrem/yr}_{\text{FutureGW}}$$

The allowable dose for soil in this survey unit is fifteen (15) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity

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resulting in fifteen (15) 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.

Table 2 – Radionuclide Specific Base Case Soil DCGL, Operational DCGLs and Required Minimum Detectable Concentrations (MDCs)			
Radionuclide⁽¹⁾	Base Case Soil DCGL (pCi/g)⁽²⁾	Operational DCGL (pCi/g)⁽³⁾	Required MDC (pCi/g)⁽⁴⁾
H-3	4.12E+02	2.62E+02	1.65E+01
C-14	5.66E+00	3.39E+00	2.26E-01
Mn-54	1.74E+01	1.05E+01	6.96E-01
Fe-55	2.74E+04	1.64E+04	1.10E+03
Co-60	3.81E+00	2.29E+00	1.52E-01
Ni-63	7.23E+02	4.34E+02	2.89E+01
Sr-90	1.55E+00	9.28E-01	6.20E-02
Nb-94	7.12E+00	4.27E+00	2.85E-01
Tc-99	1.26E+01	7.56E+00	5.04E-01
Ag-108m	7.14E+00	4.29E+00	2.86E-01
Cs-134	4.67E+00	2.80E+00	1.87E-01
Cs-137	7.91E+00	4.75E+00	3.16E-01
Eu-152	1.01E+01	6.04E+00	4.04E-01
Eu-154	9.29E+00	5.57E+00	3.72E-01
Eu-155	3.92E+02	2.35E+02	1.57E+01
Pu-238	2.96E+01	1.78E+01	1.18E+00
Pu-239/240	2.67E+01	1.60E+01	1.07E+00
Pu-241	8.70E+02	5.22E+02	3.48E+01
Am-241 ⁽⁵⁾	2.58E+01	1.55E+01	1.03E+00
Cm-243/244	2.90E+01	1.74E+01	1.16E+00

(1) **Bold** indicates those radionuclides considered to be hard to detect

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

(3) The Operational DCGL is equivalent to achieving fifteen (15) mrem/yr TEDE

(4) The required Minimum Detectable Concentration (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). However, the preferred result is the alpha spectroscopy 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.

As stated previously, Cs-137 and Co-60 were positively identified (i.e. a result greater than two (2) standard deviations uncertainty) in eight (8) of the fourteen (14) samples at concentrations up to 0.6% of the Operational DCGL when incorporating the "sum of fractions". Therefore, both Cs-137 and Co-60 were identified as radionuclides of concern for FSS. Based on the lack of evidence in the HSA and the sample results from adjacent survey areas, HTD radionuclides were de-selected as radionuclides of concern for this FSS plan. A summary of the post remediation and characterization sample results 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 9302-0000 (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 3 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 0.98 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. Additionally, three (3) judgmental or biased surface soil samples were collected within this survey unit. Two (2) of the judgmental samples were located in the vicinity of the east end of the survey unit (closest to the Radiological Control Area) and one (1) additional judgmental sample was located in the vicinity of GS-1. The general locations of the judgmental samples are illustrated in Attachment 1 and the coordinates are provided in Table 3.

The locations of the fifteen (15) soil samples used for non-parametric testing were determined randomly using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, "*Identifying, and Marking Surface Sample Locations for Final Status Survey.*" Random sampling locations were selected for this survey unit, which is appropriate for a Class 3 area. Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy.

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 numerical designations are provided along with the GPS coordinates in Table 3.

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Table 3 - Sample Measurement Locations with Associated GPS Coordinates		
Designation⁽¹⁾	Northing	Easting
9302-0000-001F	236536.99	668175.09
9302-0000-002F	236567.86	668224.00
9302-0000-003F	236591.28	668258.00
9302-0000-004F	236483.34	668233.63
9302-0000-005F	236469.57	668279.00
9302-0000-006F	236501.98	668296.15
9302-0000-007F	236520.31	668294.47
9302-0000-008F	236473.25	668328.47
9302-0000-009F	236444.96	668320.92
9302-0000-010F	236405.78	668374.20
9302-0000-011F	236420.54	668374.31
9302-0000-012F	236438.30	668388.42
9520-0001-013F/S	236468.02	668393.32
9302-0000-014F	236488.12	668384.33
9302-0000-015F/S	236465.23	668444.22
9302-0000-016B	236495.40	668405.48
9302-0000-017B	236530.36	668359.51
9302-0000-018B	236518.40	668249.31
9302-0000-019I	236525.67	668362.81

⁽¹⁾ F designates a Final Status Survey sample that was used for non-parametric testing, S designates a split sample, B designates a biased or judgmental sample and I designates an investigative sample location.

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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 two (2) soil samples for "split sample" analysis by the off-site laboratory. This location was selected randomly using the Microsoft Excel "RANDBETWEEN" function.

Table 5-9 of the LTP states that the scanning coverage requirements for an outdoor Class 3 area are judgmental. 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 necessary to be performed in two (2) separate areas. The total surface area to be scanned was approximately 10% of the survey unit. A map of the scan grid locations is provided in Attachment 1.

For this Class 3 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	3,490 m ²	Based on AutoCAD-LT
Number of Measurements	15 (15 random locations), 3 biased and 1 investigative sample locations	Type 1 and Type 2 errors were 0.05, sigma was 0.052 pCi/g for both Cs-137 and Co-60, the LBGR was set at 0.98 to maintain Relative Shift in the range between 1 and 3
Grid Spacing	N/A	No grids were established for this Class 3 survey unit
Operational DCGL	4.75 pCi/g Cs-137 2.29 pCi/g Co-60	Administratively set to achieve fifteen (15) mrem/yr TEDE ⁽¹⁾
Soil Investigation Level	4.75 pCi/g Cs-137 2.29 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 3 survey unit
Scan Survey Area Coverage	Approximately 10% of the area	The LTP requires judgmental scanning coverage for Class 3 survey units
Scan Investigation Level	Detectable over background ⁽²⁾	Administratively set to achieve fifteen (15) mrem/yr TEDE ⁽¹⁾

(1) The allowable dose for soil in this survey unit is fifteen (15) 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).

(2) Scan Investigation Level or Action Level=Background (B) + Minimum Detectable Count Rate (MDCR) and the $MDCR=1.38\sqrt{(B)/(\sqrt{p}xt)}$ where p=surveyor efficiency, in accordance with BCY-HP-0081.

5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under Final Status Survey Plan 9302-0000. The FSS plan included a 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.

Two (2) scan areas were established that constituted approximately 10% of the surface area of Survey Unit 9302-0000. Grid lines, one (1) 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 6,510 counts per minute (cpm) up to 9,330 cpm.

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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 the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 10% 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.*"

Three (3) judgmental or biased surface soil samples (9302-0000-016B, 9302-0000-017B and 9302-0000-018F) were identified and collected within this survey unit.

Two (2) samples (9302-0000-001F and 9302-0000-014F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of two (2) samples (9302-0000-013F and 9302-0000-015F) for "split sample" analysis.

6. SURVEY RESULTS

All field survey activities were conducted between March 29, 2007 and April 3, 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.

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Table 5- Scan Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level
1	6.19	6.72	NO
2	6.87	8.06	NO
3	8.06	9.01	NO
4	6.35	6.87	NO
5	7.34	7.91	NO
6	7.11	7.96	NO
7	6.96	7.69	NO
8	7.31	7.89	NO
9	9.29	10.1	NO
10	10.4	10.8	NO
11	10.9	12.4	NO
12	11.5	12.3	NO
13	10.7	11.4	NO
14	8.93	9.09	NO
15	9.39	10.1	NO
16	8.64	9.06	NO
17	9.36	10.1	NO
18	6.05	6.54	NO

(1) The action level is based on a measurement above ambient background in accordance with the FSS plan

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The scan areas, that comprised approximately 10% 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 April 3, 2007. One (1) elevated measurement location was 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)	Range of Action Levels ⁽¹⁾ (kcpm)	Elevated Reading Identification	Investigation Sample
1	1-6	12.2	9.81-10.7	9302-00-ER-01-06-1	9302-0000-019I
2	1-6	8.01	7.66-8.72	None	None

(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 splits, the three (3) biased samples and the one (1) investigative sample using gamma spectroscopy. Cs-137 and Co-60 were the only radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty).

Cs-137 was identified in five (5) and Co-60 was identified in one (1) 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 approaching 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
9302-0000-001F	1.09E-02	5.63E-03
9302-0000-002F	4.31E-02	3.59E-03
9302-0000-003F	4.11E-02	-1.89E-02
9302-0000-004F	-5.37E-03	-7.14E-03
9302-0000-005F	2.27E-03	-1.24E-02
9302-0000-006F	1.48E-02	2.12E-02
9302-0000-007F	4.96E-02	1.59E-02
9302-0000-008F	-1.61E-03	-3.63E-02
9302-0000-009F	1.70E-02	6.46E-05
9302-0000-010F	2.15E-01	1.10E-01
9302-0000-011F	3.19E-02	1.40E-02
9302-0000-012F	-4.12E-03	1.42E-02
9302-0000-013F	-3.62E-03	2.12E-02
9302-0000-014F	2.85E-03	-4.64E-03
9302-0000-015F	-3.24E-03	1.11E-02

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.

No HTD radionuclides were positively identified (i.e., a result greater than two (2) standard deviations uncertainty). 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.

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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 9302-0000 are provided in Table 8 below.

NORTHWEST PROTECTED AREA GROUNDS
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Table 8 – Results of Unity Calculation for Surface Soil Samples Comprising the Statistical Sample Population			
Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Unity Fraction ⁽¹⁾⁽²⁾
9302-0000-001F	1.09E-02	5.63E-03	0.005
9302-0000-002F	4.31E-02	3.59E-03	0.011
9302-0000-003F	4.11E-02	-	0.008
9302-0000-004F	-	-	0.000
9302-0000-005F	2.27E-03	-	0.000
9302-0000-006F	1.48E-02	2.12E-02	0.012
9302-0000-007F	4.96E-02	1.59E-02	0.017
9302-0000-008F	-	-	0.000
9302-0000-009F	1.70E-02	6.46E-05	0.004
9302-0000-010F	2.15E-01	1.10E-01	0.093
9302-0000-011F	3.19E-02	1.40E-02	0.013
9302-0000-012F	-	1.42E-02	0.005
9302-0000-013F	-	2.12E-02	0.008
9302-0000-014F	2.85E-03	-	0.000
9302-0000-015F	-	1.11E-02	0.005
9302-0000-016B	2.04E-02	3.52E-02	0.020
9302-0000-017B	2.05E-02	1.05E-04	0.004
9302-0000-018B	-	-	0.000

(1) The Operational DCGL from Table 2 is 4.75 pCi/g for Cs-137 and 2.29 pCi/g for Co-60 to achieve fifteen (15) mrem/yr TEDE respectively.

(2) "--" indicates that the sample activity was a negative value.

NORTHWEST PROTECTED AREA GROUNDS
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7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Two (2) sample locations were 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 locations 9302-0000-013F and 9302-0000-015F.

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

One (1) investigative sample was collected from scan area 1 at a location that exhibited an elevated scan reading. The investigative sample results are shown in Table 9 below.

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Unity Fraction⁽¹⁾⁽²⁾
9302-0000-019I	8.61E-04	-	0.000

(1) The Operational DCGL from Table 2 is 4.75 pCi/g for Cs-137 and 2.29 pCi/g for Co-60 to achieve fifteen (15) mrem/yr TEDE respectively.

(2) "--" indicates that the sample activity was a negative value.

9. REMEDIATION AND RESULTS

Historically, no radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to or as a result of the FSS. Health Physics TSD BCY-HP-0078, "ALARA Evaluation of Soil Remediation in Support of Final Status Survey," determined that remediation beyond that required to meet the release criteria is unnecessary and that the remaining residual radioactivity in soil was ALARA.

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

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

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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 3.

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		
Statistical Quantities	Cs-137 pCi/g	Co-60 pCi/g
DCGL _{op} :	4.75E+00	2.29E+00
Minimum Value:	-5.37E-03	-3.63E-02
Maximum Value:	2.15E-01	1.10E-01
Mean:	2.74E-02	8.26E-03
Median:	1.09E-02	5.63E-03
Standard Deviation:	5.67E-02	3.20E-02

For Cs-137, the range of the data, about four (4) 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 29% 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 3.15 for Cs-137.

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Co-60, although included in the FSS plan for compliance purposes, was positively identified in only one (1) 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 statistically significant 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 9302-0000 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 3.

The dose contribution from soil is 0.196 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 considered impacted by future groundwater radioactive contamination, as there are underground foundations and footings 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 two (2) 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 4.196 mrem/yr TEDE. Therefore, Survey Unit 9302-0000 is acceptable for unrestricted release.

NORTHWEST PROTECTED AREA GROUNDS
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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

NORTHWEST PROTECTED AREA GROUNDS
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ATTACHMENT 1 (FIGURES)

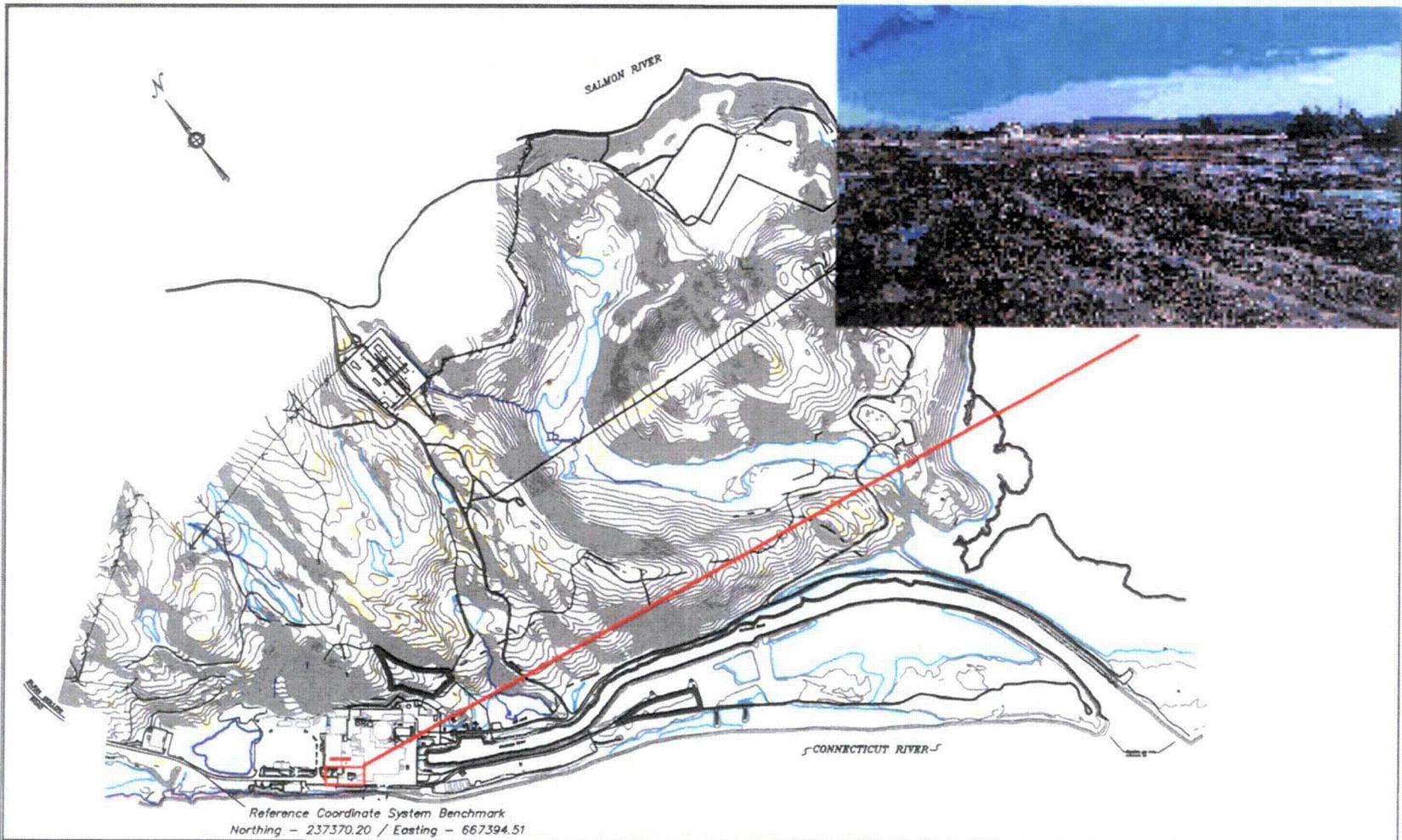


Figure 1



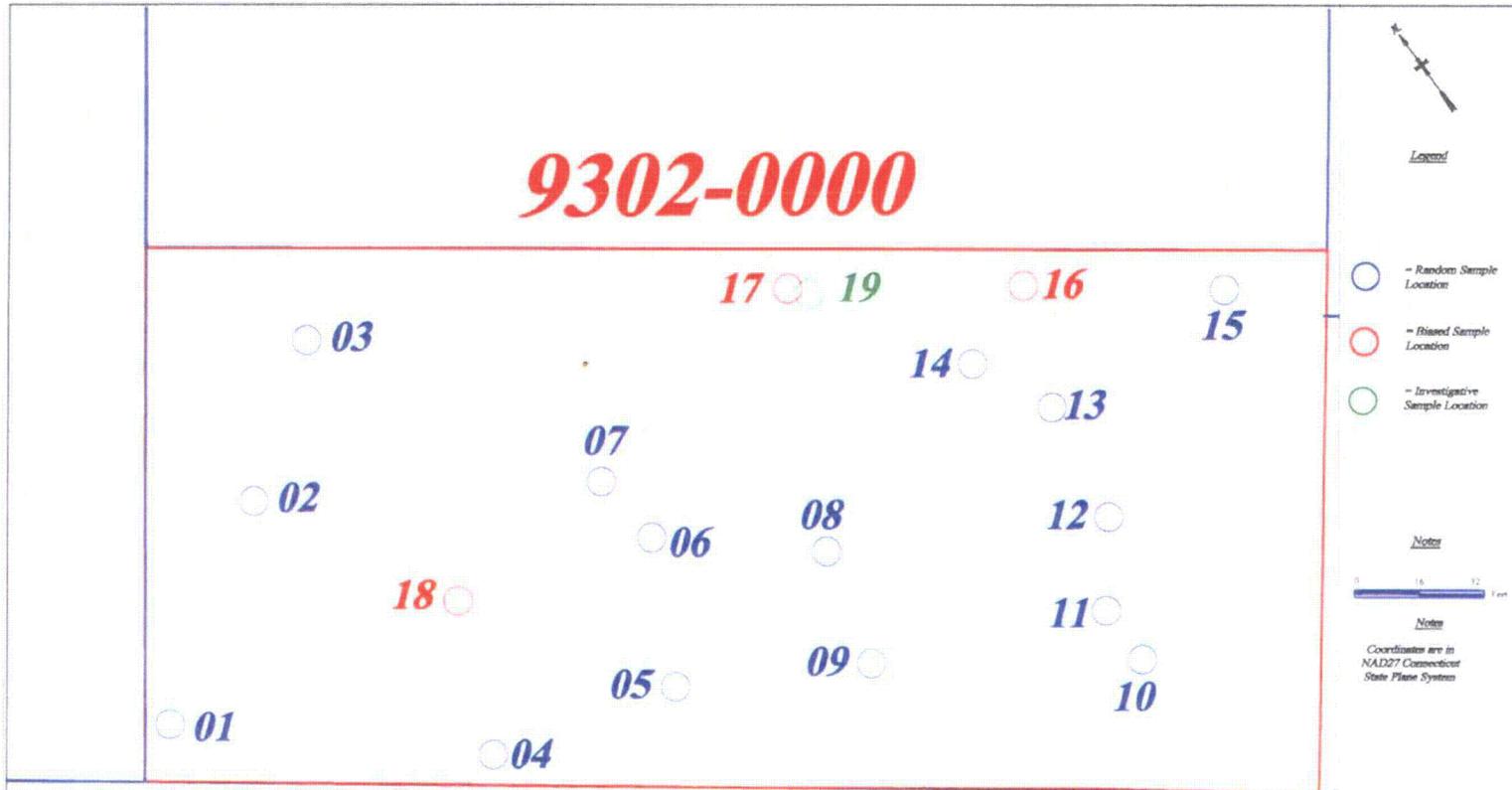
Connecticut Yankee Atomic Power Company
 Site Map With Reference To Survey Unit 9302-0000

Date

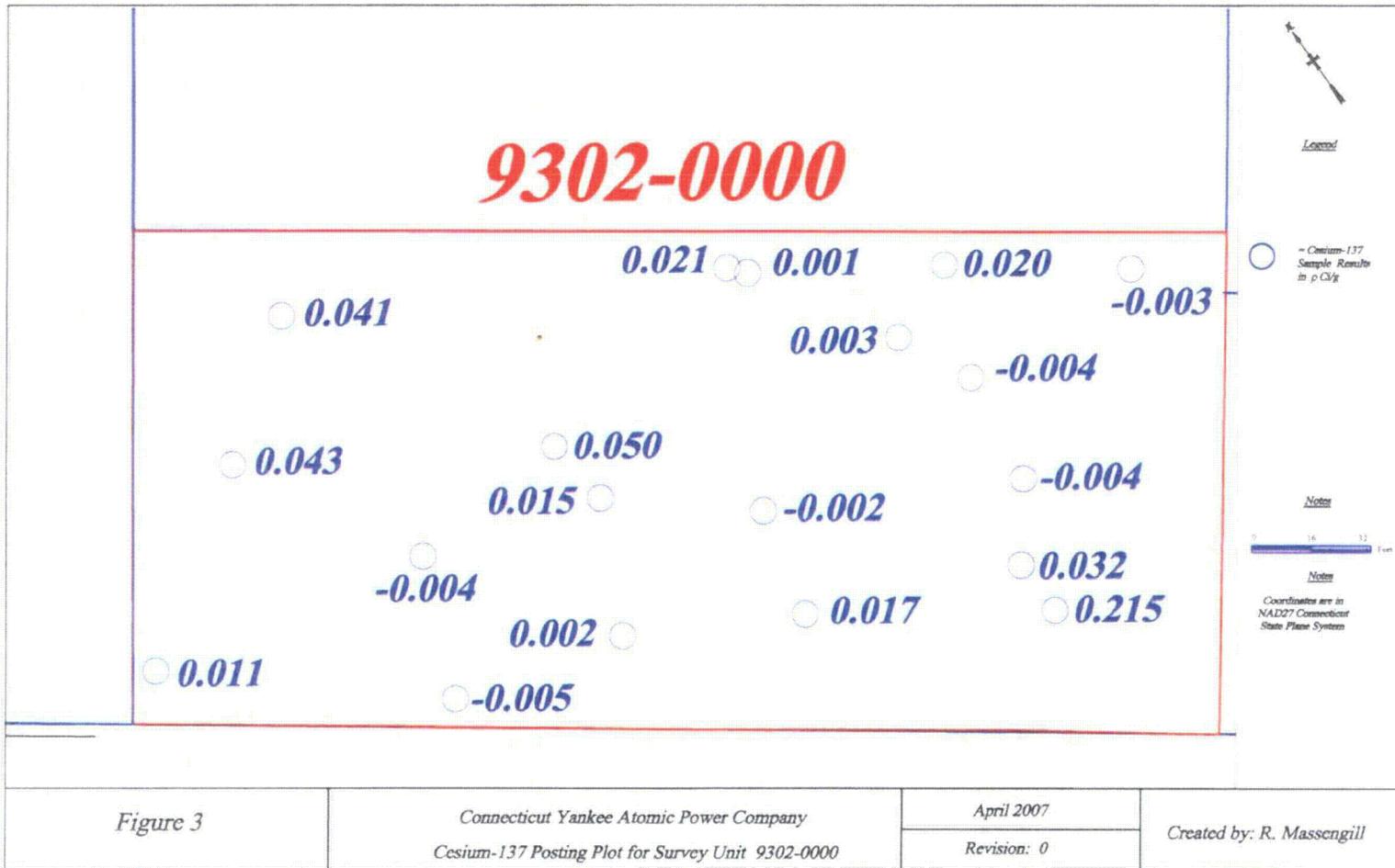
By

April 2007

R.M.



<i>Figure 2</i>	Connecticut Yankee Atomic Power Company Survey Unit 9302-0000 Sample Locations	April 2007 Revision: 0	Created by: R. Massengill
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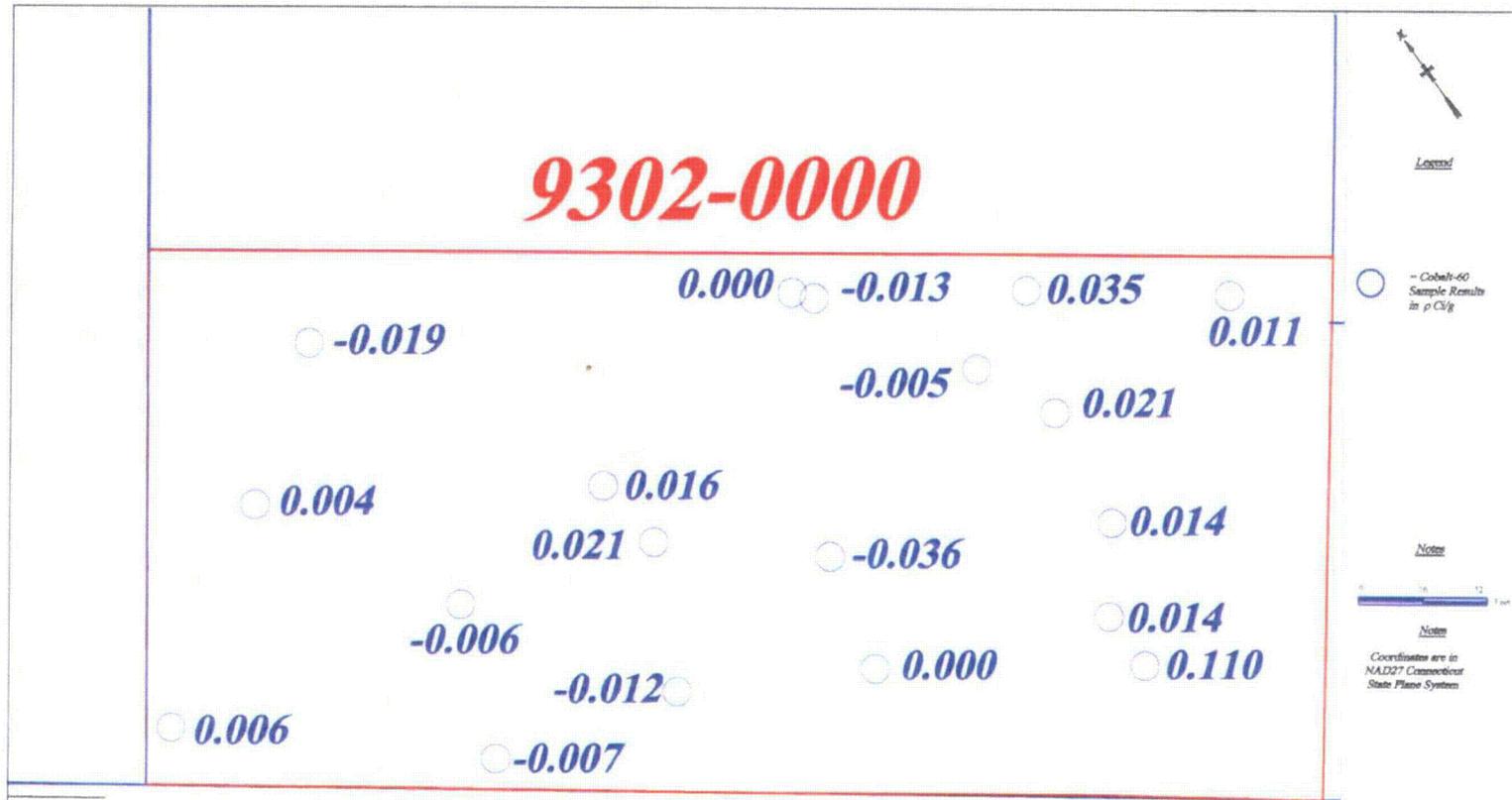


Figure 4	Connecticut Yankee Atomic Power Company	April 2007	Created by: R. Massengill
	Cobalt-60 Posting Plot for Survey Unit 9302-0000	Revision: 0	

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000
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ATTACHMENT 2 (SCAN RESULTS)

SURVEY UNIT 9302-0000
SAMPLE LOCATION SCAN RESULTS

Survey Location	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>AL ("+"=Yes)	E-600 S/N	Probe S/N
9302-00-BL-00-01-0	3/29/2007	14:03:00	5.65E+03	1.07E+03	6.72E+03		1111	1004
9302-00-SL-00-01-0	3/29/2007	14:05:00	6.19E+03				1111	1004
9302-00-BL-00-02-0	3/29/2007	14:06:00	6.88E+03	1.18E+03	8.06E+03		1111	1004
9302-00-SL-00-02-0	3/29/2007	14:08:00	6.87E+03				1111	1004
9302-00-BL-00-03-0	3/29/2007	14:09:00	7.75E+03	1.26E+03	9.01E+03		1111	1004
9302-00-SL-00-03-0	3/29/2007	14:11:00	8.06E+03				1111	1004
9302-00-BL-00-04-0	3/29/2007	14:12:00	5.78E+03	1.09E+03	6.87E+03		1111	1004
9302-00-SL-00-04-0	3/29/2007	14:13:00	6.35E+03				1111	1004
9302-00-BL-00-05-0	3/29/2007	14:15:00	6.74E+03	1.17E+03	7.91E+03		1111	1004
9302-00-SL-00-05-0	3/29/2007	14:16:00	7.34E+03				1111	1004
9302-00-BL-00-06-0	3/29/2007	14:17:00	6.78E+03	1.18E+03	7.96E+03		1111	1004
9302-00-SL-00-06-0	3/29/2007	14:18:00	7.11E+03				1111	1004
9302-00-BL-00-07-0	3/29/2007	14:19:00	6.54E+03	1.15E+03	7.69E+03		1111	1004
9302-00-SL-00-07-0	3/29/2007	14:21:00	6.96E+03				1111	1004
9302-00-BL-00-08-0	3/29/2007	14:22:00	6.72E+03	1.17E+03	7.89E+03		1111	1004
9302-00-SL-00-08-0	3/29/2007	14:26:00	7.31E+03				1111	1004
9302-00-BL-00-09-0	3/29/2007	14:27:00	8.76E+03	1.34E+03	1.01E+04		1111	1004
9302-00-SL-00-09-0	3/29/2007	14:29:00	9.29E+03				1111	1004
9302-00-BL-00-10-0	3/29/2007	14:31:00	9.45E+03	1.39E+03	1.08E+04		1111	1004
9302-00-SL-00-10-0	3/29/2007	14:35:00	1.04E+04				1111	1004
9302-00-BL-00-11-0	3/29/2007	14:36:00	1.09E+04	1.49E+03	1.24E+04		1111	1004
9302-00-SL-00-11-0	3/29/2007	14:38:00	1.09E+04				1111	1004
9302-00-BL-00-12-0	3/29/2007	14:39:00	1.08E+04	1.48E+03	1.23E+04		1111	1004
9302-00-SL-00-12-0	3/29/2007	14:42:00	1.15E+04				1111	1004
9302-00-BL-00-13-0	3/29/2007	14:43:00	1.00E+04	1.43E+03	1.14E+04		1111	1004
9302-00-SL-00-13-0	3/29/2007	14:45:00	1.07E+04				1111	1004
9302-00-BL-00-14-0	3/29/2007	14:47:00	7.83E+03	1.26E+03	9.09E+03		1111	1004
9302-00-SL-00-14-0	3/29/2007	14:48:00	8.93E+03				1111	1004
9302-00-BL-00-15-0	3/29/2007	14:50:00	8.73E+03	1.33E+03	1.01E+04		1111	1004
9302-00-SL-00-15-0	3/29/2007	14:51:00	9.39E+03				1111	1004
9302-00-BL-00-16-0	3/29/2007	14:53:00	7.80E+03	1.26E+03	9.06E+03		1111	1004
9302-00-SL-00-16-0	3/29/2007	14:54:00	8.64E+03				1111	1004
9302-00-BL-00-17-0	3/29/2007	14:55:00	8.76E+03	1.34E+03	1.01E+04		1111	1004
9302-00-SL-00-17-0	3/29/2007	14:57:00	9.36E+03				1111	1004
9302-00-BL-00-18-0	3/29/2007	14:59:00	5.48E+03	1.06E+03	6.54E+03		1111	1004
9302-00-SL-00-18-0	3/29/2007	15:02:00	6.05E+03				1111	1004

SURVEY UNIT 9302-0000
SCAN AREA SURVEY RESULTS

Survey Location	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>AL ("+"=Yes)	E-600 S/N	Probe S/N
9302-00-BC-01-01-0	4/3/2007	7:51:00	8.49E+03	1.32E+03	9.81E+03		1117	1008
9302-00-SC-01-01-0	4/3/2007	7:55:00	9.39E+03				1117	1008
9302-00-BC-01-02-0	4/3/2007	7:55:00	8.98E+03	1.35E+03	1.03E+04		1117	1008
9302-00-SC-01-02-0	4/3/2007	8:00:00	9.00E+03				1117	1008
9302-00-BC-01-03-0	4/3/2007	8:02:00	9.08E+03	1.36E+03	1.04E+04		1117	1008
9302-00-SC-01-03-0	4/3/2007	8:05:00	9.83E+03				1117	1008
9302-00-BC-01-04-0	4/3/2007	8:06:00	9.33E+03	1.38E+03	1.07E+04		1117	1008
9302-00-SC-01-04-0	4/3/2007	8:09:00	9.98E+03				1117	1008
9302-00-BC-01-05-0	4/3/2007	8:14:00	9.04E+03	1.36E+03	1.04E+04		1117	1008
9302-00-SC-01-05-0	4/3/2007	8:17:00	9.66E+03				1117	1008
9302-00-BC-01-06-0	4/3/2007	8:18:00	9.30E+03	1.38E+03	1.07E+04		1117	1008
9302-00-SC-01-06-0	4/3/2007	8:22:00	9.65E+03				1117	1008
9302-00-ER-01-06-1	4/3/2007	9:52:00	1.22E+04			+	1107	1007
9302-00-BC-02-01-0	4/3/2007	7:50:00	7.06E+03	1.20E+03	8.26E+03		1107	1007
9302-00-SC-02-01-0	4/3/2007	7:52:00	6.68E+03				1107	1007
9302-00-BC-02-02-0	4/3/2007	7:53:00	6.67E+03	1.17E+03	7.84E+03		1107	1007
9302-00-SC-02-02-0	4/3/2007	7:56:00	7.45E+03				1107	1007
9302-00-BC-02-03-0	4/3/2007	7:57:00	7.48E+03	1.24E+03	8.72E+03		1107	1007
9302-00-SC-02-03-0	4/3/2007	8:00:00	7.69E+03				1107	1007
9302-00-BC-02-04-0	4/3/2007	8:00:00	7.04E+03	1.20E+03	8.24E+03		1107	1007
9302-00-SC-02-04-0	4/3/2007	8:03:00	8.01E+03				1107	1007
9302-00-BC-02-05-0	4/3/2007	8:04:00	6.54E+03	1.15E+03	7.69E+03		1107	1007
9302-00-SC-02-05-0	4/3/2007	8:06:00	6.82E+03				1107	1007
9302-00-BC-02-06-0	4/3/2007	8:07:00	6.51E+03	1.15E+03	7.66E+03		1107	1007
9302-00-SC-02-06-0	4/3/2007	8:10:00	6.68E+03				1107	1007

NORTHWEST PROTECTED AREA GROUNDS
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ATTACHMENT 3 (LABORATORY DATA)

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General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 183412
SDG: MSR#07-0135**

April 06, 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 April 03, 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>
183412001	9302-0000-001F
183412002	9302-0000-002F
183412003	9302-0000-003F
183412004	9302-0000-004F
183412005	9302-0000-005F
183412006	9302-0000-006F
183412007	9302-0000-007F
183412008	9302-0000-008F
183412009	9302-0000-009F
183412010	9302-0000-010F
183412011	9302-0000-011F
183412012	9302-0000-012F
183412013	9302-0000-013F
183412014	9302-0000-013FS
183412015	9302-0000-014F
183412016	9302-0000-015F
183412017	9302-0000-015FS
183412018	9302-0000-016B
183412019	9302-0000-017B
183412020	9302-0000-018B

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.

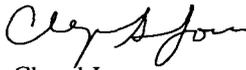
Analytical Request

Eighteen soil samples were analyzed for FSSGAM and 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 06 April 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 NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Chain of Custody and Supporting Documentation

Connecticut Yankee Atomic Power Company

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

Chain of Custody Form

No. 2007-00094

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						Comments:							
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:													
Sample Designation	Date	Time				FSSGAM	FSSALL				Comment, Preservation	Lab Sample ID	
9302-0000-012F	3/29/07	1441	TS	G	BP	X							
9302-0000-013F	3/29/07	1446	TS	G	BP	X							
9302-0000-013FS	3/29/07	1446	TS	G	BP	X							
9302-0000-014F	3/29/07	1449	TS	G	BP		X						
9302-0000-015F	3/29/07	1452	TS	G	BP	X							
9302-0000-015FS	3/29/07	1452	TS	G	BP	X							
9302-0000-016B	3/29/07	1454	TS	G	BP	X							
9302-0000-017B	3/29/07	1456	TS	G	BP	X							
9302-0000-018B	3/29/07	1503	TS	G	BP	X							
NOTES: PO #: 002332 MSR #: 07-0135 <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.: 17 ^o Deg. C Custody Sealed? Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				
1) Relinquished By <i>[Signature]</i>		Date/Time 3/30/07 1245		2) Received By <i>[Signature]</i>		Date/Time 4-3-07 930		Bill of Lading #					
3) Relinquished By		Date/Time		4) Received By		Date/Time							
5) Relinquished By		Date/Time		6) Received By		Date/Time							

Figure 1. Sample Check-in List

Date/Time Received: 4-3-07 . 930

SDG#: MSR# 07-0135

Work Order Number: 183412

Shipping Container ID: 7912 6583 9330 Chain of Custody #: 2007-00093, 2007-00094

- 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 17°
- 5. Vermiculite/packing materials is: Wet Dry
- 6. Number of samples in shipping container: 20
- 7. Sample holding times exceeded? Yes No

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

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

11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Tues Sed Date: 4-3-07 930

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCO/Work Order: <u>183412</u>
Date Received: <u>4-3-07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>Clyde</i>
Received By: <u>TS</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant # ice bags blue ice dry ice none other describe <u>17°</u>
3 Chain of custody documents included with shipment?	✓			
4 Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8 Samples received within holding time?	✓			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11 Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	✓			
14 Air Bill, Tracking #'s, & Additional Comments				<u>7912 6583 9330</u>

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

PM (or PMA) review of Hazard classification: ✓ Initials Clyde Date: Boyer 4/3/07

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 183412**

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: 622161
Prep Batch Number: 622158
Dry Soil Prep GL-RAD-A-021 Batch Number: 622157

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307621	Method Blank (MB)
1201307622	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307623	183412001(9302-0000-001F) Matrix Spike (MS)
1201307624	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# 15.

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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

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:	622162
Prep Batch Number:	622158
Dry Soil Prep GL-RAD-A-021 Batch Number:	622157

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307625	Method Blank (MB)
1201307626	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307627	183412001(9302-0000-001F) Matrix Spike (MS)
1201307628	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# 15.

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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

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:	622164
Prep Batch Number:	622158
Dry Soil Prep GL-RAD-A-021 Batch Number:	622157

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307629	Method Blank (MB)
1201307630	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307631	183412001(9302-0000-001F) Matrix Spike (MS)
1201307632	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# 9.

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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

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

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:	622283
Prep Batch Number:	622157

Sample ID	Client ID
183412001	9302-0000-001F
183412002	9302-0000-002F
183412003	9302-0000-003F
183412004	9302-0000-004F
183412005	9302-0000-005F
183412006	9302-0000-006F
183412007	9302-0000-007F
183412008	9302-0000-008F
183412009	9302-0000-009F
183412010	9302-0000-010F
183412011	9302-0000-011F
183412012	9302-0000-012F
183412013	9302-0000-013F
183412014	9302-0000-013FS
183412015	9302-0000-014F
183412016	9302-0000-015F
183412017	9302-0000-015FS
183412018	9302-0000-016B
183412019	9302-0000-017B
183412020	9302-0000-018B
1201307874	Method Blank (MB)
1201307875	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307876	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# 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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Sample 183412013 (9302-0000-013F) was recounted due to a peak shift.

Miscellaneous Information:**NCR Documentation**

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

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-212	183412003			
			183412004			
			183412008			
			183412013			
			1201307875			
		Cesium-134	183412009			
			183412010			
			183412011			
			183412012			
			183412013			
			183412014			
			183412019			
			UI	Data rejected due to interference.		183412016
						Euopium-155
		Manganese-54	183412010			

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:	622197
Prep Batch Number:	622158
Dry Soil Prep GL-RAD-A-021 Batch Number:	622157

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307712	Method Blank (MB)
1201307713	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307714	183412001(9302-0000-001F) Matrix Spike (MS)
1201307715	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# 11.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Chemical Recoveries

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint Tc99, Solid-ALL FSS
Analytical Method: DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number: 622208

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307744	Method Blank (MB)
1201307745	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307746	183412001(9302-0000-001F) Matrix Spike (MS)
1201307747	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# 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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint 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:	622203
Prep Batch Number:	622158
Dry Soil Prep GL-RAD-A-021 Batch Number:	622157

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307729	Method Blank (MB)
1201307730	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307731	183412001(9302-0000-001F) Matrix Spike (MS)
1201307732	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# 4.

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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint 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:	622207
Prep Batch Number:	622158
Dry Soil Prep GL-RAD-A-021 Batch Number:	622157

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201307739	Method Blank (MB)
1201307740	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201307741	183412001(9302-0000-001F) Matrix Spike (MS)
1201307742	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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	LSC, Tritium Dist, Solid - 3 pCi/g
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	622513

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201308338	Method Blank (MB)
1201308339	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201308340	183412001(9302-0000-001F) Matrix Spike (MS)
1201308341	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# 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: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint C14, Solid All,FSS
Analytical Method: EPA EERF C-01 Modified
Analytical Batch Number: 622514

Sample ID	Client ID
183412001	9302-0000-001F
183412015	9302-0000-014F
1201308342	Method Blank (MB)
1201308343	183412001(9302-0000-001F) Sample Duplicate (DUP)
1201308344	183412001(9302-0000-001F) Matrix Spike (MS)
1201308345	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# 9.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 183412001 (9302-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were recounted due to spectral interference. Samples 1201308343 (9302-0000-001F) and 183412001 (9302-0000-001F) were recounted due to the quench number being outside the calibration range.

Miscellaneous Information:

NCR Documentation

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

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 Williams 4/10/07

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#07-0135 GEL Work Order: 183412

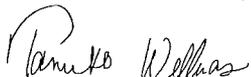
The Qualifiers in this report are defined as follows:

- * 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: April 10, 2007

Client Sample ID:	9302-0000-001F	Project:	YANK01204
Sample ID:	183412001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	29-MAR-07		
Receive Date:	03-APR-07		
Collector:	Client		
Moisture:	3.52%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0363	+/-0.0675	0.00	+/-0.0677	0.0885	pCi/g		BXJ1	04/05/07	0822	622161	1
Curium-242	U	0.00	+/-0.066	0.00	+/-0.066	0.0913	pCi/g						
Curium-243/244	U	0.00	+/-0.064	0.00	+/-0.064	0.0885	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0306	+/-0.0826	0.0476	+/-0.0827	0.178	pCi/g		BXJ1	04/05/07	0818	622162	2
Plutonium-239/240	U	0.00123	+/-0.0666	0.055	+/-0.0666	0.193	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	0.245	+/-8.37	7.02	+/-8.37	14.7	pCi/g		BXJ1	04/06/07	0937	622164	3
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.564	+/-0.160	0.0591	+/-0.160	0.118	pCi/g		MJH1	04/04/07	1328	622283	4
Americium-241	U	0.0306	+/-0.112	0.0954	+/-0.112	0.191	pCi/g						
Bismuth-212	U	0.259	+/-0.246	0.159	+/-0.246	0.318	pCi/g						
Bismuth-214		0.374	+/-0.0771	0.0307	+/-0.0771	0.0614	pCi/g						
Cesium-134	U	0.00426	+/-0.021	0.0188	+/-0.021	0.0377	pCi/g						
Cesium-137	U	0.0109	+/-0.0293	0.0194	+/-0.0293	0.0388	pCi/g						
Cobalt-60	U	0.00563	+/-0.0195	0.0171	+/-0.0195	0.0341	pCi/g						
Europium-152	U	0.030	+/-0.0674	0.0443	+/-0.0674	0.0885	pCi/g						
Europium-154	U	-0.00565	+/-0.0602	0.0503	+/-0.0602	0.101	pCi/g						
Europium-155	U	-0.0141	+/-0.0565	0.0517	+/-0.0565	0.103	pCi/g						
Lead-212		0.431	+/-0.0585	0.0268	+/-0.0585	0.0535	pCi/g						
Lead-214		0.487	+/-0.0724	0.0318	+/-0.0724	0.0635	pCi/g						
Manganese-54	U	0.00555	+/-0.0193	0.0174	+/-0.0193	0.0348	pCi/g						
Niobium-94	U	0.00315	+/-0.0185	0.016	+/-0.0185	0.0319	pCi/g						
Potassium-40		9.46	+/-0.980	0.142	+/-0.980	0.285	pCi/g						
Radium-226		0.374	+/-0.0771	0.0307	+/-0.0771	0.0614	pCi/g						
Silver-108m	U	0.00418	+/-0.0175	0.0158	+/-0.0175	0.0316	pCi/g						
Thallium-208		0.126	+/-0.0346	0.0156	+/-0.0346	0.0313	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00422	+/-0.0224	0.0193	+/-0.0224	0.0442	pCi/g		KSD1	04/06/07	1038	622197	5
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	0.324	+/-1.17	0.940	+/-1.17	2.18	pCi/g		AXD2	04/04/07	1932	622513	6

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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: April 10, 2007

Client Sample ID: 9302-0000-001F Project: YANK01204
Sample ID: 183412001 Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	-0.0288	+/-0.0997	0.0842	+/-0.0997	0.172	pCi/g		AXD2	04/09/07	1611	622514	7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-30.3	+/-24.0	18.0	+/-24.0	37.8	pCi/g		MXP1	04/06/07	0811	622203	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	1.97	+/-6.68	5.55	+/-6.68	11.5	pCi/g		MXP1	04/06/07	1329	622207	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.00684	+/-0.186	0.156	+/-0.186	0.332	pCi/g		MXP1	04/08/07	2246	622208	11

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	04/03/07	1030	622157

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	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	78	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	74	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	78	(25%-125%)
Strontium Carrier	GFPC, Sr90, solid-ALL FSS	71	(25%-125%)
Iron-59 Tracer	Liquid Scint Fe55, Solid-ALL FS	76	(15%-125%)
Nickel Carrier	Liquid Scint Ni63, Solid-ALL FS	81	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid-ALL FS	90	(15%-125%)

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

Report Date: April 10, 2007

Client Sample ID: 9302-0000-001F
Sample ID: 183412001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Notes:

The Qualifiers in this report are defined as follows :

- ** 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 For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-002F
Sample ID: 183412002
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-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	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.475	+/-0.227	0.101	+/-0.227	0.202	pCi/g		MJH1	04/04/07	1329	622283	1
Americium-241	U	0.0232	+/-0.0519	0.0441	+/-0.0519	0.0882	pCi/g						
Bismuth-212	U	0.506	+/-0.319	0.274	+/-0.319	0.548	pCi/g						
Bismuth-214		0.409	+/-0.127	0.0515	+/-0.127	0.103	pCi/g						
Cesium-134	U	0.0605	+/-0.0492	0.034	+/-0.0492	0.068	pCi/g						
Cesium-137	U	0.0431	+/-0.0356	0.028	+/-0.0356	0.0559	pCi/g						
Cobalt-60	U	0.00359	+/-0.0406	0.0296	+/-0.0406	0.0593	pCi/g						
Europium-152	U	-0.00612	+/-0.0897	0.0731	+/-0.0897	0.146	pCi/g						
Europium-154	U	0.00504	+/-0.103	0.0876	+/-0.103	0.175	pCi/g						
Europium-155	U	0.0636	+/-0.0889	0.0655	+/-0.0889	0.131	pCi/g						
Lead-212		0.515	+/-0.0809	0.0382	+/-0.0809	0.0764	pCi/g						
Lead-214		0.427	+/-0.116	0.0491	+/-0.116	0.0982	pCi/g						
Manganese-54	U	0.0103	+/-0.0338	0.0303	+/-0.0338	0.0605	pCi/g						
Niobium-94	U	-0.0151	+/-0.0367	0.0256	+/-0.0367	0.0512	pCi/g						
Potassium-40		9.45	+/-1.21	0.282	+/-1.21	0.563	pCi/g						
Radium-226		0.409	+/-0.127	0.0515	+/-0.127	0.103	pCi/g						
Silver-108m	U	0.0121	+/-0.0282	0.0257	+/-0.0282	0.0513	pCi/g						
Thallium-208		0.205	+/-0.0736	0.0296	+/-0.0736	0.0592	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	04/03/07	1030	622157

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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- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-002F
Sample ID: 183412002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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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Address : 362 Injun Hollow Rd

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

Report Date: April 10, 2007

Client Sample ID: 9302-0000-003F
Sample ID: 183412003
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 6.87%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.670	+/-0.229	0.0919	+/-0.229	0.184	pCi/g		MJH1	04/04/07	1330	622283	1
Americium-241	U	-0.00669	+/-0.0465	0.0364	+/-0.0465	0.0727	pCi/g						
Bismuth-212	UI	0.00	+/-0.474	0.305	+/-0.474	0.610	pCi/g						
Bismuth-214		0.518	+/-0.142	0.0439	+/-0.142	0.0877	pCi/g						
Cesium-134	U	0.0142	+/-0.0346	0.0314	+/-0.0346	0.0627	pCi/g						
Cesium-137	U	0.0411	+/-0.0587	0.031	+/-0.0587	0.062	pCi/g						
Cobalt-60	U	-0.0187	+/-0.0399	0.0306	+/-0.0399	0.0611	pCi/g						
Europium-152	U	-0.000722	+/-0.0986	0.0652	+/-0.0986	0.130	pCi/g						
Europium-154	U	-0.0602	+/-0.102	0.0764	+/-0.102	0.153	pCi/g						
Europium-155	U	0.0727	+/-0.0662	0.0606	+/-0.0662	0.121	pCi/g						
Lead-212		0.636	+/-0.0928	0.037	+/-0.0928	0.074	pCi/g						
Lead-214		0.495	+/-0.130	0.0476	+/-0.130	0.0952	pCi/g						
Manganese-54	U	-0.0106	+/-0.0396	0.0333	+/-0.0396	0.0666	pCi/g						
Niobium-94	U	0.00641	+/-0.0298	0.0266	+/-0.0298	0.0532	pCi/g						
Potassium-40		10.4	+/-1.30	0.276	+/-1.30	0.552	pCi/g						
Radium-226		0.518	+/-0.142	0.0439	+/-0.142	0.0877	pCi/g						
Silver-108m	U	-0.00581	+/-0.0347	0.0254	+/-0.0347	0.0507	pCi/g						
Thallium-208		0.205	+/-0.0582	0.0296	+/-0.0582	0.0591	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-003F
Sample ID: 183412003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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

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Address : 362 Injun Hollow Rd

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

Report Date: April 10, 2007

Client Sample ID: 9302-0000-004F
Sample ID: 183412004
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 4.72%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.781	+/-0.153	0.0464	+/-0.153	0.0928	pCi/g						
Americium-241	U	0.0784	+/-0.0673	0.0566	+/-0.0673	0.113	pCi/g		MJH1	04/04/07	1331	622283	1
Bismuth-212	UI	0.00	+/-0.174	0.140	+/-0.174	0.280	pCi/g						
Bismuth-214		0.455	+/-0.070	0.0256	+/-0.070	0.0511	pCi/g						
Cesium-134	U	0.0222	+/-0.0203	0.0166	+/-0.0203	0.0331	pCi/g						
Cesium-137	U	-0.00537	+/-0.0191	0.0138	+/-0.0191	0.0275	pCi/g						
Cobalt-60	U	-0.00714	+/-0.0159	0.013	+/-0.0159	0.0261	pCi/g						
Europium-152	U	0.000315	+/-0.0526	0.0351	+/-0.0526	0.0702	pCi/g						
Europium-154	U	0.0202	+/-0.0555	0.0471	+/-0.0555	0.0941	pCi/g						
Europium-155	U	-0.0053	+/-0.0458	0.0422	+/-0.0458	0.0844	pCi/g						
Lead-212		0.580	+/-0.0635	0.0219	+/-0.0635	0.0438	pCi/g						
Lead-214		0.571	+/-0.0799	0.0261	+/-0.0799	0.0521	pCi/g						
Manganese-54	U	0.0085	+/-0.0151	0.0136	+/-0.0151	0.0272	pCi/g						
Niobium-94	U	0.0204	+/-0.0144	0.0133	+/-0.0144	0.0265	pCi/g						
Potassium-40		10.3	+/-0.867	0.113	+/-0.867	0.226	pCi/g						
Radium-226		0.455	+/-0.070	0.0256	+/-0.070	0.0511	pCi/g						
Silver-108m	U	-0.00971	+/-0.0134	0.011	+/-0.0134	0.0221	pCi/g						
Thallium-208		0.192	+/-0.0333	0.0117	+/-0.0333	0.0234	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-004F
Sample ID: 183412004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-005F
Sample ID: 183412005
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 4.08%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.831	+/-0.217	0.0742	+/-0.217	0.148	pCi/g		MJH1	04/04/07	1404	622283	1
Americium-241	U	0.00663	+/-0.0418	0.0349	+/-0.0418	0.0698	pCi/g						
Bismuth-212	U	0.339	+/-0.279	0.245	+/-0.279	0.490	pCi/g						
Bismuth-214		0.566	+/-0.124	0.0467	+/-0.124	0.0933	pCi/g						
Cesium-134	U	0.0545	+/-0.0398	0.0348	+/-0.0398	0.0695	pCi/g						
Cesium-137	U	0.00227	+/-0.0356	0.0264	+/-0.0356	0.0528	pCi/g						
Cobalt-60	U	-0.0124	+/-0.0295	0.0231	+/-0.0295	0.0461	pCi/g						
Europium-152	U	0.025	+/-0.0787	0.0632	+/-0.0787	0.126	pCi/g						
Europium-154	U	-0.0109	+/-0.0887	0.0698	+/-0.0887	0.140	pCi/g						
Europium-155	U	0.0794	+/-0.0895	0.0563	+/-0.0895	0.113	pCi/g						
Lead-212		0.683	+/-0.103	0.0339	+/-0.103	0.0677	pCi/g						
Lead-214		0.637	+/-0.124	0.0447	+/-0.124	0.0894	pCi/g						
Manganese-54	U	0.0233	+/-0.026	0.0247	+/-0.026	0.0494	pCi/g						
Niobium-94	U	0.0108	+/-0.0283	0.0248	+/-0.0283	0.0496	pCi/g						
Potassium-40		10.4	+/-1.18	0.231	+/-1.18	0.462	pCi/g						
Radium-226		0.566	+/-0.124	0.0467	+/-0.124	0.0933	pCi/g						
Silver-108m	U	-0.0187	+/-0.0231	0.0189	+/-0.0231	0.0378	pCi/g						
Thallium-208		0.222	+/-0.0578	0.0227	+/-0.0578	0.0453	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	04/03/07	1030	622157

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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: April 10, 2007

Client Sample ID: 9302-0000-005F
Sample ID: 183412005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-006F
Sample ID: 183412006
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 6.07%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.418	+/-0.193	0.0682	+/-0.193	0.136	pCi/g		MJH1	04/04/07	1440	622283	1
Americium-241	U	0.00183	+/-0.0868	0.072	+/-0.0868	0.144	pCi/g						
Bismuth-212	U	0.341	+/-0.259	0.175	+/-0.259	0.350	pCi/g						
Bismuth-214		0.386	+/-0.0914	0.0357	+/-0.0914	0.0713	pCi/g						
Cesium-134	U	0.0317	+/-0.0255	0.0239	+/-0.0255	0.0477	pCi/g						
Cesium-137	U	0.0148	+/-0.0235	0.0209	+/-0.0235	0.0417	pCi/g						
Cobalt-60	U	0.0212	+/-0.0237	0.0219	+/-0.0237	0.0438	pCi/g						
Europium-152	U	0.0521	+/-0.086	0.054	+/-0.086	0.108	pCi/g						
Europium-154	U	-0.0607	+/-0.0733	0.0568	+/-0.0733	0.113	pCi/g						
Europium-155	U	0.0542	+/-0.0601	0.056	+/-0.0601	0.112	pCi/g						
Lead-212		0.516	+/-0.0705	0.0291	+/-0.0705	0.0582	pCi/g						
Lead-214		0.476	+/-0.096	0.036	+/-0.096	0.0719	pCi/g						
Manganese-54	U	-0.0026	+/-0.0224	0.0191	+/-0.0224	0.0382	pCi/g						
Niobium-94	U	0.00359	+/-0.0189	0.0168	+/-0.0189	0.0336	pCi/g						
Potassium-40		9.77	+/-1.01	0.165	+/-1.01	0.330	pCi/g						
Radium-226		0.386	+/-0.0914	0.0357	+/-0.0914	0.0713	pCi/g						
Silver-108m	U	-0.0113	+/-0.0186	0.0158	+/-0.0186	0.0316	pCi/g						
Thallium-208		0.158	+/-0.0419	0.0186	+/-0.0419	0.0372	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	04/03/07	1030	622157

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:- April 10, 2007

Client Sample ID: 9302-0000-006F
Sample ID: 183412006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-007F
Sample ID: 183412007
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 4.91%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.770	+/-0.246	0.104	+/-0.246	0.208	pCi/g		MJH1	04/04/07	1532	622283	1
Americium-241	U	0.0257	+/-0.055	0.0459	+/-0.055	0.0918	pCi/g						
Bismuth-212	U	0.372	+/-0.333	0.301	+/-0.333	0.602	pCi/g						
Bismuth-214		0.418	+/-0.115	0.057	+/-0.115	0.114	pCi/g						
Cesium-134	U	0.0142	+/-0.0415	0.0372	+/-0.0415	0.0744	pCi/g						
Cesium-137	U	0.0496	+/-0.0452	0.0308	+/-0.0452	0.0616	pCi/g						
Cobalt-60	U	0.0159	+/-0.0355	0.0314	+/-0.0355	0.0627	pCi/g						
Europium-152	U	0.0382	+/-0.0963	0.0731	+/-0.0963	0.146	pCi/g						
Europium-154	U	0.0538	+/-0.111	0.0978	+/-0.111	0.196	pCi/g						
Europium-155	U	0.0186	+/-0.0816	0.0742	+/-0.0816	0.148	pCi/g						
Lead-212		0.532	+/-0.0887	0.0415	+/-0.0887	0.083	pCi/g						
Lead-214		0.533	+/-0.143	0.0522	+/-0.143	0.104	pCi/g						
Manganese-54	U	-0.0223	+/-0.0356	0.0294	+/-0.0356	0.0588	pCi/g						
Niobium-94	U	0.00976	+/-0.0344	0.0296	+/-0.0344	0.0593	pCi/g						
Potassium-40		11.2	+/-1.33	0.267	+/-1.33	0.534	pCi/g						
Radium-226		0.418	+/-0.115	0.057	+/-0.115	0.114	pCi/g						
Silver-108m	U	-0.0125	+/-0.0307	0.0261	+/-0.0307	0.0522	pCi/g						
Thallium-208		0.161	+/-0.064	0.0284	+/-0.064	0.0567	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	04/03/07	1030	622157

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: April 10, 2007

Client Sample ID: 9302-0000-007F
Sample ID: 183412007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-008F
Sample ID: 183412008
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 6.26%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.540	+/-0.295	0.105	+/-0.295	0.211	pCi/g		MJH1	04/04/07	1533	622283	1
Americium-241	U	0.018	+/-0.0454	0.0369	+/-0.0454	0.0738	pCi/g						
Bismuth-212	UI	0.00	+/-0.407	0.275	+/-0.407	0.550	pCi/g						
Bismuth-214		0.583	+/-0.132	0.0504	+/-0.132	0.101	pCi/g						
Cesium-134	U	0.0492	+/-0.0368	0.0341	+/-0.0368	0.0682	pCi/g						
Cesium-137	U	-0.00161	+/-0.0331	0.029	+/-0.0331	0.058	pCi/g						
Cobalt-60	U	-0.0363	+/-0.0353	0.0235	+/-0.0353	0.047	pCi/g						
Europium-152	U	0.0173	+/-0.0869	0.0676	+/-0.0869	0.135	pCi/g						
Europium-154	U	-0.0793	+/-0.109	0.0801	+/-0.109	0.160	pCi/g						
Europium-155	U	0.057	+/-0.0662	0.0606	+/-0.0662	0.121	pCi/g						
Lead-212		0.700	+/-0.0959	0.0336	+/-0.0959	0.0671	pCi/g						
Lead-214		0.558	+/-0.116	0.0473	+/-0.116	0.0945	pCi/g						
Manganese-54	U	0.00883	+/-0.0341	0.0304	+/-0.0341	0.0607	pCi/g						
Niobium-94	U	-0.0141	+/-0.0331	0.0279	+/-0.0331	0.0557	pCi/g						
Potassium-40		11.0	+/-1.34	0.266	+/-1.34	0.531	pCi/g						
Radium-226		0.583	+/-0.132	0.0504	+/-0.132	0.101	pCi/g						
Silver-108m	U	-0.0053	+/-0.0259	0.0221	+/-0.0259	0.0441	pCi/g						
Thallium-208		0.218	+/-0.0549	0.0297	+/-0.0549	0.0594	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	04/03/07	1030	622157

The following Analytical Methods were performed

Method	Description
I	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: April 10, 2007

Client Sample ID: 9302-0000-008F
Sample ID: 183412008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
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 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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: April 10, 2007

Client Sample ID: 9302-0000-009F
Sample ID: 183412009
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 4.33%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.872	+/-0.146	0.0429	+/-0.146	0.0858	pCi/g		MJH1	04/04/07	1635	622283	1
Americium-241	U	0.130	+/-0.0857	0.0721	+/-0.0857	0.144	pCi/g						
Bismuth-212		0.592	+/-0.200	0.0963	+/-0.200	0.193	pCi/g						
Bismuth-214		0.784	+/-0.0916	0.0224	+/-0.0916	0.0447	pCi/g						
Cesium-134	UI	0.00	+/-0.0231	0.0159	+/-0.0231	0.0318	pCi/g						
Cesium-137	U	0.017	+/-0.0155	0.0137	+/-0.0155	0.0274	pCi/g						
Cobalt-60	U	0.000646	+/-0.0152	0.0127	+/-0.0152	0.0254	pCi/g						
Europium-152	U	-0.0466	+/-0.0458	0.0317	+/-0.0458	0.0633	pCi/g						
Europium-154	U	-0.0729	+/-0.0494	0.0373	+/-0.0494	0.0746	pCi/g						
Europium-155	U	0.0727	+/-0.0659	0.039	+/-0.0659	0.078	pCi/g						
Lead-212		0.793	+/-0.0748	0.0189	+/-0.0748	0.0379	pCi/g						
Lead-214		0.811	+/-0.0861	0.0228	+/-0.0861	0.0455	pCi/g						
Manganese-54	U	0.024	+/-0.0186	0.0121	+/-0.0186	0.0243	pCi/g						
Niobium-94	U	0.000961	+/-0.0143	0.0114	+/-0.0143	0.0228	pCi/g						
Potassium-40		13.8	+/-1.08	0.105	+/-1.08	0.211	pCi/g						
Radium-226		0.784	+/-0.0916	0.0224	+/-0.0916	0.0447	pCi/g						
Silver-108m	U	-0.00199	+/-0.0125	0.0109	+/-0.0125	0.0218	pCi/g						
Thallium-208		0.267	+/-0.0358	0.0118	+/-0.0358	0.0236	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	04/03/07	1030	622157

The following Analytical Methods were performed

Method	Description
I	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: April 10, 2007

Client Sample ID: 9302-0000-009F
Sample ID: 183412009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-010F
Sample ID: 183412010
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 5.25%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.01	+/-0.153	0.0347	+/-0.153	0.0694	pCi/g						
Americium-241	U	0.0248	+/-0.0388	0.0382	+/-0.0388	0.0763	pCi/g						
Bismuth-212		0.657	+/-0.153	0.0704	+/-0.153	0.141	pCi/g						
Bismuth-214		0.777	+/-0.0885	0.0183	+/-0.0885	0.0366	pCi/g						
Cesium-134	UI	0.00	+/-0.0186	0.0124	+/-0.0186	0.0247	pCi/g						
Cesium-137		0.215	+/-0.0286	0.0103	+/-0.0286	0.0205	pCi/g						
Cobalt-60		0.110	+/-0.0251	0.00947	+/-0.0251	0.0189	pCi/g						
Europium-152	U	-0.0362	+/-0.0409	0.0259	+/-0.0409	0.0518	pCi/g						
Europium-154	U	-0.0206	+/-0.0399	0.0302	+/-0.0399	0.0603	pCi/g						
Europium-155	U	0.0586	+/-0.0447	0.0299	+/-0.0447	0.0599	pCi/g						
Lead-212		0.962	+/-0.0793	0.0155	+/-0.0793	0.031	pCi/g						
Lead-214		0.932	+/-0.090	0.0188	+/-0.090	0.0376	pCi/g						
Manganese-54	UI	0.00	+/-0.0179	0.00948	+/-0.0179	0.019	pCi/g						
Niobium-94	U5.450E-05		+/-0.0106	0.00902	+/-0.0106	0.018	pCi/g						
Potassium-40		16.1	+/-1.09	0.0829	+/-1.09	0.166	pCi/g						
Radium-226		0.777	+/-0.0885	0.0183	+/-0.0885	0.0366	pCi/g						
Silver-108m	U	-0.00251	+/-0.0103	0.00874	+/-0.0103	0.0175	pCi/g						
Thallium-208		0.292	+/-0.0366	0.00885	+/-0.0366	0.0177	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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: April 10, 2007

Client Sample ID: 9302-0000-010F
Sample ID: 183412010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID:	9302-0000-011F	Project:	YANK01204
Sample ID:	183412011	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	29-MAR-07		
Receive Date:	03-APR-07		
Collector:	Client		
Moisture:	4.88%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.981	+/-0.172	0.0577	+/-0.172	0.115	pCi/g		MJH1	04/04/07	1748	622283	1
Americium-241	U	0.0216	+/-0.0318	0.0261	+/-0.0318	0.0522	pCi/g						
Bismuth-212		0.587	+/-0.266	0.124	+/-0.266	0.247	pCi/g						
Bismuth-214		0.784	+/-0.109	0.0328	+/-0.109	0.0655	pCi/g						
Cesium-134	UI	0.00	+/-0.0272	0.0201	+/-0.0272	0.0402	pCi/g						
Cesium-137		0.0319	+/-0.0262	0.0137	+/-0.0262	0.0274	pCi/g						
Cobalt-60	U	0.014	+/-0.018	0.0161	+/-0.018	0.0323	pCi/g						
Europium-152	U	0.00967	+/-0.0522	0.0423	+/-0.0522	0.0846	pCi/g						
Europium-154	U	0.016	+/-0.0597	0.0507	+/-0.0597	0.101	pCi/g						
Europium-155	U	0.0773	+/-0.0553	0.0401	+/-0.0553	0.0802	pCi/g						
Lead-212		0.946	+/-0.0979	0.0229	+/-0.0979	0.0458	pCi/g						
Lead-214		0.894	+/-0.103	0.0301	+/-0.103	0.0601	pCi/g						
Manganese-54	U	-0.0123	+/-0.020	0.0169	+/-0.020	0.0339	pCi/g						
Niobium-94	U	-0.00659	+/-0.0183	0.0152	+/-0.0183	0.0304	pCi/g						
Potassium-40		14.8	+/-1.09	0.145	+/-1.09	0.289	pCi/g						
Radium-226		0.784	+/-0.109	0.0328	+/-0.109	0.0655	pCi/g						
Silver-108m	U	-0.00473	+/-0.0169	0.0146	+/-0.0169	0.0291	pCi/g						
Thallium-208		0.298	+/-0.0442	0.0163	+/-0.0442	0.0327	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	04/03/07	1030	622157

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

** 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: April 10, 2007

Client Sample ID: 9302-0000-011F
Sample ID: 183412011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-012F
Sample ID: 183412012
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 8.06%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.37	+/-0.216	0.0579	+/-0.216	0.116	pCi/g		MJH1	04/04/07	1749	622283	1
Americium-241	U	0.0191	+/-0.0298	0.0238	+/-0.0298	0.0476	pCi/g						
Bismuth-212		0.936	+/-0.283	0.129	+/-0.283	0.257	pCi/g						
Bismuth-214		1.24	+/-0.137	0.0294	+/-0.137	0.0588	pCi/g						
Cesium-134	UI	0.00	+/-0.0385	0.0225	+/-0.0385	0.045	pCi/g						
Cesium-137	U	-0.00412	+/-0.0227	0.017	+/-0.0227	0.034	pCi/g						
Cobalt-60	U	0.0142	+/-0.0196	0.017	+/-0.0196	0.034	pCi/g						
Europium-152	U	-0.021	+/-0.047	0.0378	+/-0.047	0.0755	pCi/g						
Europium-154	U	-0.0054	+/-0.0637	0.0524	+/-0.0637	0.105	pCi/g						
Europium-155	UI	0.00	+/-0.0597	0.035	+/-0.0597	0.070	pCi/g						
Lead-212		1.26	+/-0.124	0.0204	+/-0.124	0.0408	pCi/g						
Lead-214		1.39	+/-0.139	0.0274	+/-0.139	0.0547	pCi/g						
Manganese-54	U	0.00826	+/-0.0264	0.0161	+/-0.0264	0.0322	pCi/g						
Niobium-94	U	0.00347	+/-0.0189	0.0158	+/-0.0189	0.0316	pCi/g						
Potassium-40		20.1	+/-1.42	0.133	+/-1.42	0.265	pCi/g						
Radium-226		1.24	+/-0.137	0.0294	+/-0.137	0.0588	pCi/g						
Silver-108m	U	0.0147	+/-0.0158	0.0141	+/-0.0158	0.0282	pCi/g						
Thallium-208		0.448	+/-0.0544	0.0155	+/-0.0544	0.031	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-012F
Sample ID: 183412012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-013F
Sample ID: 183412013
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 7.91%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.11	+/-0.215	0.0706	+/-0.215	0.141	pCi/g		MJH1	04/05/07	1617	622283	1
Americium-241	U	0.0218	+/-0.0931	0.0749	+/-0.0931	0.150	pCi/g						
Bismuth-212	UI	0.00	+/-0.324	0.233	+/-0.324	0.467	pCi/g						
Bismuth-214		0.912	+/-0.145	0.0443	+/-0.145	0.0886	pCi/g						
Cesium-134	UI	0.00	+/-0.0357	0.0276	+/-0.0357	0.0551	pCi/g						
Cesium-137	U	-0.00362	+/-0.0276	0.023	+/-0.0276	0.046	pCi/g						
Cobalt-60	U	0.0212	+/-0.0266	0.0239	+/-0.0266	0.0478	pCi/g						
Europium-152	U	-0.0485	+/-0.0744	0.0541	+/-0.0744	0.108	pCi/g						
Europium-154	U	-0.0459	+/-0.0792	0.0624	+/-0.0792	0.125	pCi/g						
Europium-155	U	0.0895	+/-0.0662	0.0611	+/-0.0662	0.122	pCi/g						
Lead-212		1.16	+/-0.113	0.0301	+/-0.113	0.0602	pCi/g						
Lead-214		1.01	+/-0.135	0.0393	+/-0.135	0.0785	pCi/g						
Manganese-54	U	0.00376	+/-0.0268	0.0233	+/-0.0268	0.0466	pCi/g						
Niobium-94	U	-0.0104	+/-0.0236	0.0191	+/-0.0236	0.0382	pCi/g						
Potassium-40		18.6	+/-1.59	0.201	+/-1.59	0.401	pCi/g						
Radium-226		0.912	+/-0.145	0.0443	+/-0.145	0.0886	pCi/g						
Silver-108m	U	0.00725	+/-0.0204	0.018	+/-0.0204	0.0359	pCi/g						
Thallium-208		0.346	+/-0.0602	0.0197	+/-0.0602	0.0393	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	04/03/07	1030	622157

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3
2	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

GEL LABORATORIES LLC

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Certificate of Analysis

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

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

Report Date: April 10, 2007

Client Sample ID: 9302-0000-013F
Sample ID: 183412013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-013FS
Sample ID: 183412014
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 8.14%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.11	+/-0.184	0.059	+/-0.184	0.118	pCi/g		MJH1	04/04/07	1751	622283	1
Americium-241	U	0.0205	+/-0.0274	0.024	+/-0.0274	0.0479	pCi/g						
Bismuth-212		0.681	+/-0.244	0.130	+/-0.244	0.259	pCi/g						
Bismuth-214		1.01	+/-0.132	0.0277	+/-0.132	0.0554	pCi/g						
Cesium-134	UI	0.00	+/-0.0404	0.0234	+/-0.0404	0.0468	pCi/g						
Cesium-137	U	0.0122	+/-0.0203	0.0181	+/-0.0203	0.0362	pCi/g						
Cobalt-60	U	-0.000158	+/-0.0223	0.0186	+/-0.0223	0.0371	pCi/g						
Europium-152	U	-0.0623	+/-0.0611	0.0377	+/-0.0611	0.0753	pCi/g						
Europium-154	U	-0.00722	+/-0.0766	0.0636	+/-0.0766	0.127	pCi/g						
Europium-155	U	0.0523	+/-0.0478	0.0361	+/-0.0478	0.0721	pCi/g						
Lead-212		1.09	+/-0.106	0.0217	+/-0.106	0.0433	pCi/g						
Lead-214		1.03	+/-0.118	0.0281	+/-0.118	0.0562	pCi/g						
Manganese-54	U	0.0204	+/-0.0235	0.0184	+/-0.0235	0.0368	pCi/g						
Niobium-94	U	-0.00788	+/-0.0188	0.0161	+/-0.0188	0.0322	pCi/g						
Potassium-40		18.0	+/-0.954	0.149	+/-0.954	0.298	pCi/g						
Radium-226		1.01	+/-0.132	0.0277	+/-0.132	0.0554	pCi/g						
Silver-108m	U	-0.00641	+/-0.0163	0.0138	+/-0.0163	0.0276	pCi/g						
Thallium-208		0.382	+/-0.0585	0.0156	+/-0.0585	0.0312	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	04/03/07	1030	622157

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-013FS
Sample ID: 183412014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-014F
Sample ID: 183412015
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 6.65%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0132	+/-0.0239	0.0385	+/-0.0239	0.159	pCi/g		BXJ1	04/05/07	0822	622161	1
Curium-242	U	0.0238	+/-0.0631	0.0281	+/-0.0632	0.141	pCi/g						
Curium-243/244	U	-0.0146	+/-0.0202	0.0385	+/-0.0203	0.159	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.00	+/-0.0606	0.0509	+/-0.0606	0.190	pCi/g		BXJ1	04/05/07	0818	622162	2
Plutonium-239/240	U	-0.00785	+/-0.066	0.0294	+/-0.066	0.147	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	2.38	+/-7.60	6.27	+/-7.61	13.2	pCi/g		BXJ1	04/06/07	0953	622164	3
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.634	+/-0.321	0.118	+/-0.321	0.235	pCi/g		MJH1	04/05/07	0904	622283	4
Americium-241	U	0.051	+/-0.0574	0.0489	+/-0.0574	0.0977	pCi/g						
Bismuth-212	U	0.467	+/-0.425	0.309	+/-0.425	0.617	pCi/g						
Bismuth-214		0.519	+/-0.142	0.0662	+/-0.142	0.132	pCi/g						
Cesium-134	U	0.0496	+/-0.0738	0.0405	+/-0.0738	0.081	pCi/g						
Cesium-137	U	0.00285	+/-0.040	0.0342	+/-0.040	0.0683	pCi/g						
Cobalt-60	U	-0.00464	+/-0.047	0.0331	+/-0.047	0.0662	pCi/g						
Europium-152	U	-0.0455	+/-0.107	0.0755	+/-0.107	0.151	pCi/g						
Europium-154	U	0.00657	+/-0.131	0.095	+/-0.131	0.190	pCi/g						
Europium-155	U	-0.00617	+/-0.0812	0.0733	+/-0.0812	0.147	pCi/g						
Lead-212		0.803	+/-0.110	0.0435	+/-0.110	0.0869	pCi/g						
Lead-214		0.668	+/-0.145	0.055	+/-0.145	0.110	pCi/g						
Manganese-54	U	-0.0215	+/-0.0361	0.030	+/-0.0361	0.0599	pCi/g						
Niobium-94	U	0.00567	+/-0.035	0.030	+/-0.035	0.0599	pCi/g						
Potassium-40		12.9	+/-1.42	0.290	+/-1.42	0.580	pCi/g						
Radium-226		0.519	+/-0.142	0.0662	+/-0.142	0.132	pCi/g						
Silver-108m	U	-0.0355	+/-0.0318	0.0258	+/-0.0318	0.0516	pCi/g						
Thallium-208		0.260	+/-0.0788	0.0301	+/-0.0788	0.0603	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0177	+/-0.0199	0.0192	+/-0.0199	0.0439	pCi/g		KSD1	04/06/07	1038	622197	5
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	1.16	+/-1.33	0.964	+/-1.33	2.24	pCi/g		AXD2	04/04/07	1954	622513	6

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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: April,10, 2007

Client Sample ID: 9302-0000-014F
Sample ID: 183412015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	-0.0045	+/-0.0971	0.0815	+/-0.0971	0.166	pCi/g		AXD2	04/06/07	2346	622514	7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	8.92	+/-29.9	21.1	+/-29.9	44.5	pCi/g		MXP1	04/06/07	0828	622203	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	2.30	+/-7.82	6.49	+/-7.82	13.4	pCi/g		MXP1	04/06/07	1401	622207	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.117	+/-0.186	0.163	+/-0.186	0.347	pCi/g		MXP1	04/08/07	2304	622208	11

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	04/03/07	1030	622157

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	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	84	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	71	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	85	(25%-125%)
Strontium Carrier	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Iron-59 Tracer	Liquid Scint Fe55, Solid-ALL FS	66	(15%-125%)
Nickel Carrier	Liquid Scint Ni63, Solid-ALL FS	71	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid-ALL FS	87	(15%-125%)

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

Report Date: April 10, 2007

Client Sample ID: 9302-0000-014F
Sample ID: 183412015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Notes:

The Qualifiers in this report are defined as follows :

- ** 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 For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-015F
Sample ID: 183412016
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 5.21%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.04	+/-0.259	0.0896	+/-0.259	0.179	pCi/g		MJH1	04/05/07	0906	622283	1
Americium-241	U	0.0111	+/-0.0434	0.0361	+/-0.0434	0.0722	pCi/g						
Bismuth-212	U	0.398	+/-0.268	0.248	+/-0.268	0.496	pCi/g						
Bismuth-214		0.690	+/-0.116	0.0383	+/-0.116	0.0766	pCi/g						
Cesium-134	UI	0.00	+/-0.0386	0.0262	+/-0.0386	0.0523	pCi/g						
Cesium-137	U	-0.00324	+/-0.0287	0.0239	+/-0.0287	0.0477	pCi/g						
Cobalt-60	U	0.0111	+/-0.0309	0.0271	+/-0.0309	0.0541	pCi/g						
Europium-152	U	-0.0198	+/-0.0801	0.0573	+/-0.0801	0.115	pCi/g						
Europium-154	U	0.00845	+/-0.103	0.087	+/-0.103	0.174	pCi/g						
Europium-155	U	0.0685	+/-0.0794	0.0586	+/-0.0794	0.117	pCi/g						
Lead-212		0.945	+/-0.121	0.0338	+/-0.121	0.0675	pCi/g						
Lead-214		0.730	+/-0.120	0.0434	+/-0.120	0.0867	pCi/g						
Manganese-54	U	-0.00658	+/-0.0276	0.0236	+/-0.0276	0.0472	pCi/g						
Niobium-94	U	0.0234	+/-0.0279	0.0251	+/-0.0279	0.0502	pCi/g						
Potassium-40		16.4	+/-1.55	0.191	+/-1.55	0.382	pCi/g						
Radium-226		0.690	+/-0.116	0.0383	+/-0.116	0.0766	pCi/g						
Silver-108m	U	-0.00587	+/-0.024	0.0207	+/-0.024	0.0414	pCi/g						
Thallium-208		0.310	+/-0.0646	0.0224	+/-0.0646	0.0447	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-015F
Sample ID: 183412016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-015FS
Sample ID: 183412017
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 5.48%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.838	+/-0.254	0.120	+/-0.254	0.240	pCi/g		MJH1	04/05/07	0907	622283	1
Americium-241	U	-0.0163	+/-0.0483	0.0399	+/-0.0483	0.0798	pCi/g						
Bismuth-212		0.785	+/-0.349	0.212	+/-0.349	0.425	pCi/g						
Bismuth-214		0.664	+/-0.151	0.0479	+/-0.151	0.0956	pCi/g						
Cesium-134	U	0.048	+/-0.0509	0.039	+/-0.0509	0.078	pCi/g						
Cesium-137	U	-0.00376	+/-0.0335	0.0273	+/-0.0335	0.0545	pCi/g						
Cobalt-60	U	-0.000241	+/-0.0383	0.0316	+/-0.0383	0.0632	pCi/g						
Europium-152	U	0.0839	+/-0.0804	0.0722	+/-0.0804	0.144	pCi/g						
Europium-154	U	0.0136	+/-0.111	0.0935	+/-0.111	0.187	pCi/g						
Europium-155	U	0.0399	+/-0.0687	0.0643	+/-0.0687	0.129	pCi/g						
Lead-212		0.975	+/-0.120	0.0351	+/-0.120	0.0701	pCi/g						
Lead-214		0.679	+/-0.136	0.0453	+/-0.136	0.0906	pCi/g						
Manganese-54	U	0.000871	+/-0.0354	0.0302	+/-0.0354	0.0604	pCi/g						
Niobium-94	U	-0.0158	+/-0.0326	0.0259	+/-0.0326	0.0518	pCi/g						
Potassium-40		15.5	+/-1.60	0.209	+/-1.60	0.417	pCi/g						
Radium-226		0.664	+/-0.151	0.0479	+/-0.151	0.0956	pCi/g						
Silver-108m	U	0.00205	+/-0.0253	0.0223	+/-0.0253	0.0446	pCi/g						
Thallium-208		0.307	+/-0.0636	0.025	+/-0.0636	0.050	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-015FS
Sample ID: 183412017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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
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 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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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: April 10, 2007

Client Sample ID: 9302-0000-016B
Sample ID: 183412018
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 6.93%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.772	+/-0.256	0.113	+/-0.256	0.225	pCi/g		MJH1	04/05/07	0908	622283	1
Americium-241	U	0.0448	+/-0.0467	0.0391	+/-0.0467	0.0781	pCi/g						
Bismuth-212		0.918	+/-0.418	0.228	+/-0.418	0.456	pCi/g						
Bismuth-214		0.578	+/-0.119	0.0289	+/-0.119	0.0577	pCi/g						
Cesium-134	U	0.0386	+/-0.0467	0.0389	+/-0.0467	0.0778	pCi/g						
Cesium-137	U	0.0204	+/-0.0312	0.0292	+/-0.0312	0.0584	pCi/g						
Cobalt-60	U	0.0352	+/-0.0492	0.037	+/-0.0492	0.074	pCi/g						
Europium-152	U	-0.0172	+/-0.0914	0.0643	+/-0.0914	0.129	pCi/g						
Europium-154	U	-0.067	+/-0.112	0.0852	+/-0.112	0.170	pCi/g						
Europium-155	U	0.0287	+/-0.104	0.0598	+/-0.104	0.119	pCi/g						
Lead-212		0.838	+/-0.108	0.0373	+/-0.108	0.0745	pCi/g						
Lead-214		0.652	+/-0.134	0.0485	+/-0.134	0.0969	pCi/g						
Manganese-54	U	-0.00538	+/-0.0371	0.027	+/-0.0371	0.054	pCi/g						
Niobium-94	U	0.00601	+/-0.0305	0.0273	+/-0.0305	0.0545	pCi/g						
Potassium-40		13.5	+/-1.42	0.228	+/-1.42	0.456	pCi/g						
Radium-226		0.578	+/-0.119	0.0289	+/-0.119	0.0577	pCi/g						
Silver-108m	U	0.0262	+/-0.0293	0.0271	+/-0.0293	0.0542	pCi/g						
Thallium-208		0.284	+/-0.0681	0.0269	+/-0.0681	0.0538	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	04/03/07	1030	622157

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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- < Result is less than value reported

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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: April 10, 2007

Client Sample ID: 9302-0000-016B
Sample ID: 183412018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-017B
Sample ID: 183412019
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 7.82%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.50	+/-0.247	0.0632	+/-0.247	0.126	pCi/g		MJH1	04/05/07	0909	622283	1
Americium-241	U	0.0377	+/-0.096	0.0748	+/-0.096	0.150	pCi/g						
Bismuth-212		0.651	+/-0.357	0.140	+/-0.357	0.279	pCi/g						
Bismuth-214		1.06	+/-0.133	0.0331	+/-0.133	0.0662	pCi/g						
Cesium-134	UI	0.00	+/-0.0352	0.0234	+/-0.0352	0.0468	pCi/g						
Cesium-137	U	0.0205	+/-0.027	0.0207	+/-0.027	0.0413	pCi/g						
Cobalt-60	U	0.000105	+/-0.0223	0.0189	+/-0.0223	0.0378	pCi/g						
Europium-152	U	-0.0433	+/-0.0759	0.0514	+/-0.0759	0.103	pCi/g						
Europium-154	U	0.0592	+/-0.0899	0.0603	+/-0.0899	0.120	pCi/g						
Europium-155	U	0.0868	+/-0.0681	0.0626	+/-0.0681	0.125	pCi/g						
Lead-212		1.31	+/-0.119	0.0309	+/-0.119	0.0618	pCi/g						
Lead-214		1.27	+/-0.142	0.0348	+/-0.142	0.0696	pCi/g						
Manganese-54	U	0.0171	+/-0.0248	0.0192	+/-0.0248	0.0384	pCi/g						
Niobium-94	U	0.0164	+/-0.0216	0.0188	+/-0.0216	0.0377	pCi/g						
Potassium-40		20.9	+/-1.60	0.162	+/-1.60	0.323	pCi/g						
Radium-226		1.06	+/-0.133	0.0331	+/-0.133	0.0662	pCi/g						
Silver-108m	U	-0.00939	+/-0.0201	0.0166	+/-0.0201	0.0331	pCi/g						
Thallium-208		0.340	+/-0.0549	0.0187	+/-0.0549	0.0374	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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

Certificate of Analysis

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

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

Report Date: April 10, 2007

Client Sample ID: 9302-0000-017B
Sample ID: 183412019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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: April 10, 2007

Client Sample ID: 9302-0000-018B
Sample ID: 183412020
Matrix: TS
Collect Date: 29-MAR-07
Receive Date: 03-APR-07
Collector: Client
Moisture: 4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.664	+/-0.159	0.0551	+/-0.159	0.110	pCi/g		MJH1	04/05/07	0914	622283	1
Americium-241	U	-0.025	+/-0.0982	0.081	+/-0.0982	0.162	pCi/g						
Bismuth-212		0.312	+/-0.244	0.107	+/-0.244	0.213	pCi/g						
Bismuth-214		0.375	+/-0.0868	0.0322	+/-0.0868	0.0644	pCi/g						
Cesium-134	U	-0.00352	+/-0.022	0.0184	+/-0.022	0.0369	pCi/g						
Cesium-137	U	-0.00368	+/-0.020	0.0169	+/-0.020	0.0337	pCi/g						
Cobalt-60	U	-0.00616	+/-0.0211	0.017	+/-0.0211	0.034	pCi/g						
Europium-152	U	-0.0232	+/-0.0541	0.0408	+/-0.0541	0.0816	pCi/g						
Europium-154	U	-0.0114	+/-0.064	0.053	+/-0.064	0.106	pCi/g						
Europium-155	U	-0.00743	+/-0.0648	0.0521	+/-0.0648	0.104	pCi/g						
Lead-212		0.461	+/-0.0576	0.0233	+/-0.0576	0.0466	pCi/g						
Lead-214		0.455	+/-0.0832	0.0322	+/-0.0832	0.0643	pCi/g						
Manganese-54	U	-0.00437	+/-0.019	0.0164	+/-0.019	0.0327	pCi/g						
Niobium-94	U	0.011	+/-0.0201	0.0178	+/-0.0201	0.0356	pCi/g						
Potassium-40		9.33	+/-0.971	0.153	+/-0.971	0.306	pCi/g						
Radium-226		0.375	+/-0.0868	0.0322	+/-0.0868	0.0644	pCi/g						
Silver-108m	U	0.00565	+/-0.0168	0.0152	+/-0.0168	0.0304	pCi/g						
Thallium-208		0.147	+/-0.037	0.0168	+/-0.037	0.0335	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	04/03/07	1030	622157

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 :

- ** Analyte is a surrogate compound
- < Result is less than value reported

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: April 10, 2007

Client Sample ID: 9302-0000-018B
Sample ID: 183412020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: April 10, 2007
Page 1 of 9

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 183412

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	622161										
QC1201307622	183412001	DUP									
Americium-241	U	0.0363	U	-0.0367	pCi/g	36500		(0% - 100%)	BXJ1	04/05/07	08:22
	Uncert:	+/-0.0675		+/-0.0624							
	TPU:	+/-0.0677		+/-0.0625							
Curium-242	U	0.00	U	0.0243	pCi/g	200		(0% - 100%)			
	Uncert:	+/-0.066		+/-0.0644							
	TPU:	+/-0.066		+/-0.0645							
Curium-243/244	U	0.00	U	0.00	pCi/g	0		(0% - 100%)			
	Uncert:	+/-0.064		+/-0.0607							
	TPU:	+/-0.064		+/-0.0607							
QC1201307624	LCS										
Americium-241		13.3		14.0	pCi/g		105	(75%-125%)			
	Uncert:			+/-1.35							
	TPU:			+/-2.31							
Curium-242			U	0.0678	pCi/g						
	Uncert:			+/-0.0939							
	TPU:			+/-0.0944							
Curium-243/244		15.9		15.3	pCi/g		96	(75%-125%)			
	Uncert:			+/-1.40							
	TPU:			+/-2.49							
QC1201307621	MB										
Americium-241			U	-0.029	pCi/g						
	Uncert:			+/-0.0576							
	TPU:			+/-0.0578							
Curium-242			U	0.00	pCi/g						
	Uncert:			+/-0.0582							
	TPU:			+/-0.0582							
Curium-243/244			U	-0.00706	pCi/g						
	Uncert:			+/-0.0138							
	TPU:			+/-0.0139							
QC1201307623	183412001	MS									
Americium-241	U	0.0363		13.2	pCi/g		97	(75%-125%)			
	Uncert:	+/-0.0675		+/-1.21							
	TPU:	+/-0.0677		+/-2.10							
Curium-242	U	0.00	U	0.00	pCi/g						
	Uncert:	+/-0.066		+/-0.0578							
	TPU:	+/-0.066		+/-0.0578							
Curium-243/244	U	0.00		15.4	pCi/g		95	(75%-125%)			
	Uncert:	+/-0.064		+/-1.30							
	TPU:	+/-0.064		+/-2.38							
Batch	622162										
QC1201307626	183412001	DUP									
Plutonium-238	U	0.0306	U	-0.127	pCi/g	327		(0% - 100%)	BXJ1	04/05/07	08:18

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QC Summary

Workorder: 183412

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec									
Batch	622162								
Plutonium-239/240									
	Uncert:	+/-0.0826	+/-0.0584						
	TPU:	+/-0.0827	+/-0.0602						
	U	0.00123	U	0.0679	pCi/g	193	: (0% - 100%)		
	Uncert:	+/-0.0666	+/-0.120						
	TPU:	+/-0.0666	+/-0.121						
QC1201307628	LCS								
Plutonium-238			U	-0.0299	pCi/g		(75%-125%)		04/05/07 08:18
	Uncert:			+/-0.0623					
	TPU:			+/-0.0623					
Plutonium-239/240	13.2			13.2	pCi/g	100	(75%-125%)		
	Uncert:			+/-1.15					
	TPU:			+/-1.87					
QC1201307625	MB								
Plutonium-238			U	0.00	pCi/g				04/05/07 08:18
	Uncert:			+/-0.0548					
	TPU:			+/-0.0548					
Plutonium-239/240			U	0.00	pCi/g				
	Uncert:			+/-0.0548					
	TPU:			+/-0.0548					
QC1201307627	183412001	MS							
Plutonium-238		U	0.0306	U	0.116	pCi/g	(75%-125%)		04/05/07 08:18
	Uncert:		+/-0.0826		+/-0.122				
	TPU:		+/-0.0827		+/-0.123				
Plutonium-239/240	13.5	U	0.00123		13.2	pCi/g	98 (75%-125%)		
	Uncert:		+/-0.0666		+/-1.22				
	TPU:		+/-0.0666		+/-1.94				
Batch	622164								
QC1201307630	183412001	DUP							
Plutonium-241		U	0.245	U	6.06	pCi/g	0 (0% - 100%)	BXJ1	04/06/07 10:26
	Uncert:		+/-8.37		+/-9.04				
	TPU:		+/-8.37		+/-9.06				
QC1201307632	LCS								
Plutonium-241			139		130	pCi/g	94 (75%-125%)		04/06/07 10:58
	Uncert:				+/-12.9				
	TPU:				+/-19.3				
QC1201307629	MB								
Plutonium-241				U	8.01	pCi/g			04/06/07 10:09
	Uncert:				+/-8.10				
	TPU:				+/-8.15				
QC1201307631	183412001	MS							
Plutonium-241		139	U	0.245		122	pCi/g	87 (75%-125%)	04/06/07 10:42
	Uncert:			+/-8.37		+/-13.3			
	TPU:			+/-8.37		+/-18.9			
Rad Gamma Spec									
Batch	622283								
QC1201307875	183412001	DUP							
Actinium-228			0.564		0.465	pCi/g	19 (0% - 100%)	MJH1	04/05/07 09:16
	Uncert:		+/-0.160		+/-0.134				
					+/-0.134				

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QC Summary

Workorder: 183412

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	622283										
Americium-241	TPU:	+/-0.160									
	U	0.0306	U	0.0408	pCi/g	29		(0% - 100%)			
	Uncert:	+/-0.112		+/-0.0859							
Bismuth-212	TPU:	+/-0.112		+/-0.0859							
	U	0.259	UI	0.00	pCi/g	16		(0% - 100%)			
	Uncert:	+/-0.246		+/-0.175							
Bismuth-214	TPU:	+/-0.246		+/-0.175							
		0.374		0.391	pCi/g	5		(0% - 100%)			
	Uncert:	+/-0.0771		+/-0.0732							
Cesium-134	TPU:	+/-0.0771		+/-0.0732							
	U	0.00426	U	0.0153	pCi/g	113		(0% - 100%)			
	Uncert:	+/-0.021		+/-0.020							
Cesium-137	TPU:	+/-0.021		+/-0.020							
	U	0.0109	U	0.00952	pCi/g	14		(0% - 100%)			
	Uncert:	+/-0.0293		+/-0.0207							
Cobalt-60	TPU:	+/-0.0293		+/-0.0207							
	U	0.00563	U	0.0194	pCi/g	110		(0% - 100%)			
	Uncert:	+/-0.0195		+/-0.0179							
Europium-152	TPU:	+/-0.0195		+/-0.0179							
	U	0.030	U	0.0188	pCi/g	46		(0% - 100%)			
	Uncert:	+/-0.0674		+/-0.0616							
Europium-154	TPU:	+/-0.0674		+/-0.0616							
	U	-0.00565	U	-0.0548	pCi/g	163		(0% - 100%)			
	Uncert:	+/-0.0602		+/-0.0748							
Europium-155	TPU:	+/-0.0602		+/-0.0748							
	U	-0.0141	U	-0.0151	pCi/g	7		(0% - 100%)			
	Uncert:	+/-0.0565		+/-0.0508							
Lead-212	TPU:	+/-0.0565		+/-0.0508							
		0.431		0.380	pCi/g	13		(0% - 100%)			
	Uncert:	+/-0.0585		+/-0.0707							
Lead-214	TPU:	+/-0.0585		+/-0.0707							
		0.487		0.456	pCi/g	7		(0% - 100%)			
	Uncert:	+/-0.0724		+/-0.0821							
Manganese-54	TPU:	+/-0.0724		+/-0.0821							
	U	0.00555	U	-0.00315	pCi/g	727		(0% - 100%)			
	Uncert:	+/-0.0193		+/-0.0176							
Niobium-94	TPU:	+/-0.0193		+/-0.0176							
	U	0.00315	U	0.00967	pCi/g	102		(0% - 100%)			
	Uncert:	+/-0.0185		+/-0.0193							
Potassium-40	TPU:	+/-0.0185		+/-0.0193							
		9.46		9.25	pCi/g	2		(0% - 20%)			
	Uncert:	+/-0.980		+/-0.965							
Radium-226	TPU:	+/-0.980		+/-0.965							
		0.374		0.391	pCi/g	5		(0% - 100%)			
	Uncert:	+/-0.0771		+/-0.0732							
Silver-108m	TPU:	+/-0.0771		+/-0.0732							
	U	0.00418	U	-0.0106	pCi/g	461		(0% - 100%)			
	Uncert:	+/-0.0175		+/-0.0158							

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QC Summary

Workorder: 183412

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	622283									
Thallium-208	TPU:	+/-0.0175	+/-0.0158							
		0.126	0.144	pCi/g	14		(0% - 100%)			
	Uncert:	+/-0.0346	+/-0.0413							
	TPU:	+/-0.0346	+/-0.0413							
QC1201307876	LCS									
Actinium-228			0.770	pCi/g					04/05/07	09:17
	Uncert:		+/-0.466							
	TPU:		+/-0.466							
Americium-241	16.0		13.7	pCi/g		86	(75%-125%)			
	Uncert:		+/-1.67							
	TPU:		+/-1.67							
Bismuth-212		U	0.785	pCi/g						
	Uncert:		+/-0.882							
	TPU:		+/-0.882							
Bismuth-214			0.469	pCi/g						
	Uncert:		+/-0.211							
	TPU:		+/-0.211							
Cesium-134		U	0.0312	pCi/g						
	Uncert:		+/-0.0762							
	TPU:		+/-0.0762							
Cesium-137	6.20		5.98	pCi/g		97	(75%-125%)			
	Uncert:		+/-0.559							
	TPU:		+/-0.559							
Cobalt-60	9.31		9.67	pCi/g		104	(75%-125%)			
	Uncert:		+/-0.609							
	TPU:		+/-0.609							
Europium-152		U	0.00251	pCi/g						
	Uncert:		+/-0.194							
	TPU:		+/-0.194							
Europium-154		U	0.0014	pCi/g						
	Uncert:		+/-0.176							
	TPU:		+/-0.176							
Europium-155		U	0.0612	pCi/g						
	Uncert:		+/-0.229							
	TPU:		+/-0.229							
Lead-212			0.951	pCi/g						
	Uncert:		+/-0.171							
	TPU:		+/-0.171							
Lead-214			0.813	pCi/g						
	Uncert:		+/-0.225							
	TPU:		+/-0.225							
Manganese-54		U	-0.0375	pCi/g						
	Uncert:		+/-0.0684							
	TPU:		+/-0.0684							
Niobium-94		U	-0.0137	pCi/g						
	Uncert:		+/-0.0655							
	TPU:		+/-0.0655							
Potassium-40		U	0.902	pCi/g						

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QC Summary

Workorder: 183412

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	622283								
	Uncert:		+/-0.822						
	TPU:		+/-0.822						
Radium-226			0.469	pCi/g			(75%-125%)		
	Uncert:		+/-0.211						
	TPU:		+/-0.211						
Silver-108m		U	-0.0684	pCi/g					
	Uncert:		+/-0.0626						
	TPU:		+/-0.0626						
Thallium-208			0.207	pCi/g					
	Uncert:		+/-0.0907						
	TPU:		+/-0.0907						
QC1201307874 MB									
Actinium-228		U	-0.00035	pCi/g					04/05/07 09:15
	Uncert:		+/-0.0441						
	TPU:		+/-0.0441						
Americium-241		U	-0.0109	pCi/g					
	Uncert:		+/-0.0744						
	TPU:		+/-0.0744						
Bismuth-212		U	0.130	pCi/g					
	Uncert:		+/-0.108						
	TPU:		+/-0.108						
Bismuth-214		U	0.0149	pCi/g					
	Uncert:		+/-0.0317						
	TPU:		+/-0.0317						
Cesium-134		U	0.0138	pCi/g					
	Uncert:		+/-0.0136						
	TPU:		+/-0.0136						
Cesium-137		U	0.000391	pCi/g					
	Uncert:		+/-0.0136						
	TPU:		+/-0.0136						
Cobalt-60		U	-0.0115	pCi/g					
	Uncert:		+/-0.0154						
	TPU:		+/-0.0154						
Europium-152		U	-0.0154	pCi/g					
	Uncert:		+/-0.0373						
	TPU:		+/-0.0373						
Europium-154		U	-0.0253	pCi/g					
	Uncert:		+/-0.0371						
	TPU:		+/-0.0371						
Europium-155		U	-0.0127	pCi/g					
	Uncert:		+/-0.0396						
	TPU:		+/-0.0396						
Lead-212		U	0.0191	pCi/g					
	Uncert:		+/-0.0378						
	TPU:		+/-0.0378						
Lead-214		U	0.0057	pCi/g					
	Uncert:		+/-0.0301						
	TPU:		+/-0.0301						

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QC Summary

Workorder: 183412

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	622283									
Manganese-54		U	0.00593	pCi/g						
	Uncert:		+/-0.0134							
	TPU:		+/-0.0134							
Niobium-94		U	-0.00144	pCi/g						
	Uncert:		+/-0.0132							
	TPU:		+/-0.0132							
Potassium-40		U	0.154	pCi/g						
	Uncert:		+/-0.182							
	TPU:		+/-0.182							
Radium-226		U	0.0149	pCi/g						
	Uncert:		+/-0.0317							
	TPU:		+/-0.0317							
Silver-108m		U	-0.0148	pCi/g						
	Uncert:		+/-0.0128							
	TPU:		+/-0.0128							
Thallium-208		U	-0.00579	pCi/g						
	Uncert:		+/-0.0171							
	TPU:		+/-0.0171							
Rad Gas Flow										
Batch	622197									
QC1201307713	183412001	DUP								
Strontium-90		U	-0.00422	U	0.0111	pCi/g	0	(0% - 100%) KSD1	04/06/07	10:38
	Uncert:		+/-0.0224		+/-0.018					
	TPU:		+/-0.0224		+/-0.0181					
QC1201307715	LCS									
Strontium-90			1.40		1.57	pCi/g	112	(75%-125%)	04/06/07	10:38
	Uncert:				+/-0.0987					
	TPU:				+/-0.110					
QC1201307712	MB									
Strontium-90		U	-0.00522	U		pCi/g			04/06/07	10:38
	Uncert:		+/-0.0136							
	TPU:		+/-0.0136							
QC1201307714	183412001	MS								
Strontium-90		U	4.36	U	-0.00422	4.84	pCi/g	111	(75%-125%)	04/06/07 10:38
	Uncert:		+/-0.0224		+/-0.297					
	TPU:		+/-0.0224		+/-0.331					
Rad Liquid Scintillation										
Batch	622203									
QC1201307730	183412001	DUP								
Iron-55		U	-30.3	U	13.8	pCi/g	0	(0% - 100%) MXP1	04/06/07	09:01
	Uncert:		+/-24.0		+/-29.7					
	TPU:		+/-24.0		+/-29.7					
QC1201307732	LCS									
Iron-55			1150		1070	pCi/g	93	(75%-125%)	04/06/07	09:35
	Uncert:				+/-59.8					
	TPU:				+/-95.4					
QC1201307729	MB									
Iron-55		U		U	4.58	pCi/g			04/06/07	08:45

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

QC Summary

Workorder: 183412

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation									
Batch 622203									
			Uncert:						+/-30.7
			TPU:						+/-30.7
QC1201307731	183412001	MS							
Iron-55	1230	U	-30.3		1110	pCi/g	91 (75%-125%)		04/06/07 09:18
			Uncert:	+/-24.0					+/-63.3
			TPU:	+/-24.0					+/-100
Batch 622207									
QC1201307740	183412001	DUP							
Nickel-63		U	1.97	U	4.10	pCi/g	0 (0% - 100%) MXP1		04/06/07 15:06
			Uncert:	+/-6.68					+/-6.84
			TPU:	+/-6.68					+/-6.84
QC1201307742	LCS								
Nickel-63	548				641	pCi/g	117 (75%-125%)		04/06/07 15:59
			Uncert:		+/-18.9				
			TPU:		+/-29.5				
QC1201307739	MB								
Nickel-63				U	2.68	pCi/g			04/06/07 14:34
			Uncert:		+/-6.53				
			TPU:		+/-6.53				
QC1201307741	183412001	MS							
Nickel-63	554	U	1.97		538	pCi/g	97 (75%-125%)		04/06/07 15:38
			Uncert:	+/-6.68					+/-21.9
			TPU:	+/-6.68					+/-29.1
Batch 622208									
QC1201307745	183412001	DUP							
Technetium-99		U	0.00684	U	-0.0366	pCi/g	292 (0% - 100%) MXP1		04/08/07 23:39
			Uncert:	+/-0.186					+/-0.202
			TPU:	+/-0.186					+/-0.202
QC1201307747	LCS								
Technetium-99	19.3				17.5	pCi/g	91 (75%-125%)		04/09/07 00:14
			Uncert:		+/-0.657				
			TPU:		+/-0.782				
QC1201307744	MB								
Technetium-99				U	-0.0126	pCi/g			04/08/07 23:21
			Uncert:		+/-0.171				
			TPU:		+/-0.171				
QC1201307746	183412001	MS							
Technetium-99	20.1	U	0.00684		18.3	pCi/g	91 (75%-125%)		04/08/07 23:56
			Uncert:	+/-0.186					+/-0.748
			TPU:	+/-0.186					+/-0.870
Batch 622513									
QC1201308339	183412001	DUP							
Tritium		U	0.324	U	-0.723	pCi/g	0 (0% - 100%) AXD2		04/04/07 20:39
			Uncert:	+/-1.17					+/-1.01
			TPU:	+/-1.17					+/-1.01
QC1201308341	LCS								
Tritium	11.1				10.8	pCi/g	97 (75%-125%)		04/04/07 21:19
			Uncert:		+/-2.63				
			TPU:		+/-2.63				

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QC Summary

Workorder: 183412

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation									
Batch 622513									
QC1201308338	MB								
Tritium		U	-0.195	pCi/g					04/04/07 20:17
		Uncert:	+/-1.04						
		TPU:	+/-1.04						
QC1201308340	183412001 MS								
Tritium	11.1	U	0.324	9.95	pCi/g	89	(75%-125%)		04/04/07 21:02
		Uncert:	+/-1.17	+/-2.51					
		TPU:	+/-1.17	+/-2.51					
Batch 622514									
QC1201308343	183412001 DUP								
Carbon-14		U	-0.0288	U	-0.124	pCi/g	0	(0% - 100%) AXD2	04/09/07 17:16
		Uncert:	+/-0.0997	+/-0.0977					
		TPU:	+/-0.0997	+/-0.0977					
QC1201308345	LCS								
Carbon-14	6.78			6.47	pCi/g	95	(75%-125%)		04/07/07 03:56
		Uncert:		+/-0.189					
		TPU:		+/-0.214					
QC1201308342	MB								
Carbon-14			U	-0.00443	pCi/g				04/07/07 00:48
		Uncert:		+/-0.0957					
		TPU:		+/-0.0957					
QC1201308344	183412001 MS								
Carbon-14	7.01	U	-0.0288	6.88	pCi/g	98	(75%-125%)		04/07/07 02:53
		Uncert:	+/-0.0997	+/-0.194					
		TPU:	+/-0.0997	+/-0.222					

Notes:

The Qualifiers in this report are defined as follows:

- ** 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 For General Chemistry and Organic analysis the 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
- QC Samples were not spiked with this compound

GEL LABORATORIES LLC

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QC Summary

Workorder: 183412

Page 9 of 9

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Y										
^										
h										

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.

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General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 183554
SDG: MSR#07-00139**

April 09, 2007

Laboratory Identification:

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

Summary

Sample receipt

The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on April 04, 2007 for analysis. Shipping container temperature was checked, documented, and within specifications. The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following sample:

<u>Laboratory Identification</u>	<u>Sample Description</u>
183554001	9302-0000-019-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.

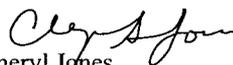
Analytical Request

One soil sample was analyzed for FSSGAM.

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

Cheryl Jones
Project Manager

List of current GEL Certifications as of 09 April 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 NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

**Chain of Custody
and
Supporting
Documentation**

Connecticut Yankee Atomic Power Company

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

Chain of Custody Form

No. 2007-00114

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL							Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)														183554%	
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:														Comment, Preservation	
Sample Designation	Date	Time													
9302-0000-019-1	4/3/07	0952	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 07-0139 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other			Internal Container Temp: _____ Deg. C Custody Sealed? Custody Seal Intact? Y N						
1) Relinquished By <i>Paula</i>		Date/Time 4/3/07 1300		2) Received By <i>Mike K...</i>		Date/Time 4-4-07 1000		Bill of Lading # _____							
3) Relinquished By		Date/Time		4) Received By		Date/Time									
5) Relinquished By		Date/Time		6) Received By		Date/Time									

9

Figure 1. Sample Check-in List

Date/Time Received: 4-4-07 10:00

SDG#: MSR# 07-0139

Work Order Number: 183554

Shipping Container ID: 7996 1538 5387 Chain of Custody #: 2007-00114

- 1. Custody Seals on shipping container intact? Yes [] No [] NA ✓
- 2. Custody Seals dated and signed? Yes [] No [] NA ✓
- 3. Chain-of-Custody record present? Yes [✓] No []
- 4. Cooler temperature 22 °C FED EX BOX
- 5. Vermiculite/packing materials is: Wet [] Dry [✓] NA ✓
- 6. Number of samples in shipping container: 1
- 7. Sample holding times exceeded? Yes [] No [✓]

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

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

11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Mike Kalin Date: 4-4-07

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>CONN YANKEE</u>	SDG/ARCOC/Work Order: <u>18354</u>
Date Received: <u>4-4-07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>Clyde</i>
Received By: <u>MK</u>	

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

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

For PMA) review of Hazard classification: Initials CAJ Date: 4/4/07

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 183554**

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: 622655
Prep Batch Number: 622627

Sample ID	Client ID
183554001	9302-0000-019-I
1201308632	Method Blank (MB)
1201308633	183480001(9306-0000-020-I) Sample Duplicate (DUP)
1201308634	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# 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: 183480001 (9306-0000-020-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

The sample and duplicate, 1201308633 (9306-0000-020-I), did not meet the relative percent difference requirement for TI-208, however they do meet the relative error ratio requirement with a value of 1.66236.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak width.	Cesium-137	1201308633
UI	Data rejected due to low abundance.	Cesium-134	183554001 1201308633
UI	Data rejected due to no valid peak.	Potassium-40	1201308632

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 Williams 4/10/07

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#07-00139 GEL Work Order: 183554

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: April 10, 2007

Client Sample ID:	9302-0000-019-I	Project:	YANK01204
Sample ID:	183554001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	03-APR-07		
Receive Date:	04-APR-07		
Collector:	Client		
Moisture:	5.04%		

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

Rad Gamma Spec Analysis

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

Actinium-228		1.44	+/-0.293	0.0941	+/-0.293	0.188	pCi/g		MJH1	04/06/07	0423	622655	1
Americium-241	U	0.107	+/-0.120	0.100	+/-0.120	0.200	pCi/g						
Bismuth-212		0.713	+/-0.385	0.219	+/-0.385	0.437	pCi/g						
Bismuth-214		1.47	+/-0.193	0.0554	+/-0.193	0.111	pCi/g						
Cesium-134	UI	0.00	+/-0.0533	0.036	+/-0.0533	0.0719	pCi/g						
Cesium-137	U	0.000861	+/-0.0524	0.029	+/-0.0524	0.058	pCi/g						
Cobalt-60	U	-0.0134	+/-0.0328	0.026	+/-0.0328	0.0521	pCi/g						
Europium-152	U	0.0837	+/-0.0891	0.080	+/-0.0891	0.160	pCi/g						
Europium-154	U	-0.0643	+/-0.111	0.0729	+/-0.111	0.146	pCi/g						
Europium-155	U	-0.0103	+/-0.104	0.0924	+/-0.104	0.185	pCi/g						
Lead-212		1.44	+/-0.153	0.0473	+/-0.153	0.0946	pCi/g						
Lead-214		1.39	+/-0.186	0.0571	+/-0.186	0.114	pCi/g						
Manganese-54	U	0.00741	+/-0.0301	0.0263	+/-0.0301	0.0526	pCi/g						
Niobium-94	U	0.0314	+/-0.0301	0.0267	+/-0.0301	0.0534	pCi/g						
Potassium-40		22.8	+/-1.91	0.204	+/-1.91	0.407	pCi/g						
Radium-226		1.47	+/-0.193	0.0554	+/-0.193	0.111	pCi/g						
Silver-108m	U	0.000724	+/-0.0295	0.0256	+/-0.0295	0.0511	pCi/g						
Thallium-208		0.431	+/-0.0798	0.0273	+/-0.0798	0.0545	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	04/04/07	1141	622627

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 :

** Analyte is a surrogate compound

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: April 10, 2007

Client Sample ID: 9302-0000-019-I
Sample ID: 183554001

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

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

- < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the 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.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: April 10, 2007

Page 1 of 5

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 183554

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	622655										
QC1201308633 183480001 DUP											
Actinium-228		1.38		1.44	pCi/g	5		(0% - 100%)	MJH1	04/10/07	09:39
		Uncert:	+/-0.356	+/-0.334							
		TPU:	+/-0.356	+/-0.334							
Americium-241	UI	0.00	U	0.081	pCi/g	60		(0% - 100%)			
		Uncert:	+/-0.0774	+/-0.0682							
		TPU:	+/-0.0774	+/-0.0682							
Bismuth-212		0.953		0.989	pCi/g	4		(0% - 100%)			
		Uncert:	+/-0.572	+/-0.549							
		TPU:	+/-0.572	+/-0.549							
Bismuth-214		1.61		1.45	pCi/g	11		(0% - 20%)			
		Uncert:	+/-0.232	+/-0.243							
		TPU:	+/-0.232	+/-0.243							
Cesium-134	U	0.0508	UI	0.00	pCi/g	86		(0% - 100%)			
		Uncert:	+/-0.054	+/-0.0607							
		TPU:	+/-0.054	+/-0.0607							
Cesium-137	U	0.0595	UI	0.00	pCi/g	36		(0% - 100%)			
		Uncert:	+/-0.0724	+/-0.0717							
		TPU:	+/-0.0724	+/-0.0717							
Cobalt-60	U	-0.0463	U	-0.00321	pCi/g	174		(0% - 100%)			
		Uncert:	+/-0.0468	+/-0.0534							
		TPU:	+/-0.0468	+/-0.0534							
Europium-152	U	0.0542	U	-0.0128	pCi/g	323		(0% - 100%)			
		Uncert:	+/-0.142	+/-0.138							
		TPU:	+/-0.142	+/-0.138							
Europium-154	U	-0.171	U	-0.0914	pCi/g	61		(0% - 100%)			
		Uncert:	+/-0.153	+/-0.159							
		TPU:	+/-0.153	+/-0.159							
Europium-155	U	0.0608	U	0.137	pCi/g	77		(0% - 100%)			
		Uncert:	+/-0.127	+/-0.109							
		TPU:	+/-0.127	+/-0.109							
Lead-212		1.32		1.30	pCi/g	2		(0% - 20%)			
		Uncert:	+/-0.162	+/-0.157							
		TPU:	+/-0.162	+/-0.157							
Lead-214		1.88		1.58	pCi/g	17		(0% - 20%)			
		Uncert:	+/-0.246	+/-0.219							
		TPU:	+/-0.246	+/-0.219							
Manganese-54	U	0.0268	U	0.0269	pCi/g	0		(0% - 100%)			
		Uncert:	+/-0.0477	+/-0.051							
		TPU:	+/-0.0477	+/-0.051							
Niobium-94	U	0.0332	U	0.00914	pCi/g	114		(0% - 100%)			
		Uncert:	+/-0.0472	+/-0.0525							
		TPU:	+/-0.0472	+/-0.0525							

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QC Summary

Workorder: 183554

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	622655									
Potassium-40		20.9	22.2	pCi/g	6		(0% - 20%)			
	Uncert:	+/-1.99	+/-1.92							
	TPU:	+/-1.99	+/-1.92							
Radium-226		1.61	1.45	pCi/g	11		(0% - 100%)			
	Uncert:	+/-0.232	+/-0.243							
	TPU:	+/-0.232	+/-0.243							
Silver-108m	U	0.033	-0.0527	pCi/g	872		(0% - 100%)			
	Uncert:	+/-0.0409	+/-0.0395							
	TPU:	+/-0.0409	+/-0.0395							
Thallium-208		0.369	0.503	pCi/g	31*		(0%-20%)			
	Uncert:	+/-0.109	+/-0.114							
	TPU:	+/-0.109	+/-0.114							
QC1201308634	LCS									
Actinium-228			1.36	pCi/g					04/06/07	13:38
	Uncert:		+/-0.598							
	TPU:		+/-0.00							
Americium-241	16.4		13.8	pCi/g		84	(75%-125%)			
	Uncert:		+/-1.38							
	TPU:		+/-0.00							
Bismuth-212			1.93	pCi/g						
	Uncert:		+/-1.49							
	TPU:		+/-0.00							
Bismuth-214			0.887	pCi/g						
	Uncert:		+/-0.295							
	TPU:		+/-0.00							
Cesium-134		U	0.0849	pCi/g						
	Uncert:		+/-0.109							
	TPU:		+/-0.00							
Cesium-137	6.35		6.17	pCi/g		97	(75%-125%)			
	Uncert:		+/-0.595							
	TPU:		+/-0.00							
Cobalt-60	9.53		9.73	pCi/g		102	(75%-125%)			
	Uncert:		+/-0.704							
	TPU:		+/-0.00							
Europium-152		U	-0.0829	pCi/g						
	Uncert:		+/-0.279							
	TPU:		+/-0.00							
Europium-154		U	-0.0535	pCi/g						
	Uncert:		+/-0.227							
	TPU:		+/-0.00							
Europium-155		U	0.140	pCi/g						
	Uncert:		+/-0.319							
	TPU:		+/-0.00							
Lead-212			1.57	pCi/g						
	Uncert:		+/-0.264							
	TPU:		+/-0.00							
Lead-214			1.06	pCi/g						
	Uncert:		+/-0.304							

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QC Summary

Workorder: 183554

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	622655									
Manganese-54	TPU:		+/-0.00							
		U	0.029	pCi/g						
	Uncert:	:	+/-0.0987							
	TPU:		+/-0.00							
Niobium-94		U	-0.0205	pCi/g						
	Uncert:		+/-0.112							
	TPU:		+/-0.00							
Potassium-40		U	1.20	pCi/g						
	Uncert:		+/-0.931							
	TPU:		+/-0.00							
Radium-226			0.887	pCi/g			(75%-125%)			
	Uncert:		+/-0.295							
	TPU:		+/-0.00							
Silver-108m		U	0.0565	pCi/g						
	Uncert:		+/-0.0899							
	TPU:		+/-0.00							
Thallium-208			0.453	pCi/g						
	Uncert:		+/-0.166							
	TPU:		+/-0.00							
QC1201308632 MB										
Actinium-228		U	-0.00616	pCi/g					04/06/07	07:28
	Uncert:		+/-0.0926							
	TPU:		+/-0.0926							
Americium-241		U	0.102	pCi/g						
	Uncert:		+/-0.0847							
	TPU:		+/-0.0847							
Bismuth-212		U	-0.145	pCi/g						
	Uncert:		+/-0.200							
	TPU:		+/-0.200							
Bismuth-214		U	-0.0179	pCi/g						
	Uncert:		+/-0.0539							
	TPU:		+/-0.0539							
Cesium-134		U	0.00204	pCi/g						
	Uncert:		+/-0.023							
	TPU:		+/-0.023							
Cesium-137		U	-0.0531	pCi/g						
	Uncert:		+/-0.0276							
	TPU:		+/-0.0276							
Cobalt-60		U	0.0204	pCi/g						
	Uncert:		+/-0.0209							
	TPU:		+/-0.0209							
Europium-152		U	0.0229	pCi/g						
	Uncert:		+/-0.0607							
	TPU:		+/-0.0607							
Europium-154		U	-0.0182	pCi/g						
	Uncert:		+/-0.0507							
	TPU:		+/-0.0507							
Europium-155		U	0.0553	pCi/g						

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QC Summary

Workorder: 183554

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	622655									
			Uncert:							
			TPU:							
Lead-212		U	0.00638	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.0537	pCi/g						
			Uncert:							
			TPU:							
Manganese-54		U	0.0203	pCi/g						
			Uncert:							
			TPU:							
Niobium-94		U	0.00193	pCi/g						
			Uncert:							
			TPU:							
Potassium-40		UI	0.00	pCi/g						
			Uncert:							
			TPU:							
Radium-226		U	-0.0179	pCi/g						
			Uncert:							
			TPU:							
Silver-108m		U	-0.0253	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	0.0494	pCi/g						
			Uncert:							
			TPU:							

Notes:

The Qualifiers in this report are defined as follows:

- ** 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 For General Chemistry and Organic analysis the 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

GEL LABORATORIES LLC

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QC Summary

Workorder: 183554

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

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000
RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000
RELEASE RECORD

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

Preliminary Data Review Form - Samples for the Sign Test

Survey Area: 9302 Survey Unit: 0000
 Survey Unit Name: Northwest Protected Area Grounds
 Classification: 3
 Survey Media: Soil
 Type of Survey: Final Status Survey
 Type of Measurement: Gross Measurement
 Number of Measurements: 15
 Operational DCGL: 1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60
Minimum Value:	-5.37E-03	-3.63E-02
Maximum Value:	2.15E-01	1.10E-01
Mean:	2.74E-02	8.26E-03
Median:	1.09E-02	5.63E-03
Standard Deviation:	5.67E-02	3.20E-02
Skew:	3.15E+00	2.35E+00

RADIONUCLIDE CONCENTRATION (pCi/g)

NUMBER	Cs-137	Co-60	Cs Identified?	Co Identified?
9302-0000-001F	1.09E-02	5.63E-03	NO	NO
9302-0000-002F	4.31E-02	3.59E-03	YES	NO
9302-0000-003F	4.11E-02	1.89E-02	NO	NO
9302-0000-004F	5.37E-03	7.14E-03	NO	NO
9302-0000-005F	2.27E-03	1.24E-02	NO	NO
9302-0000-006F	1.48E-02	7.60E-03	NO	NO
9302-0000-007F	4.96E-02	1.59E-02	YES	NO
9302-0000-008F	1.61E-03	3.63E-02	NO	NO
9302-0000-009F	1.70E-02	6.46E-05	YES	NO
9302-0000-010F	2.15E-01	1.10E-01	YES	YES
9302-0000-011F	3.19E-02	1.40E-02	YES	NO
9302-0000-012F	4.12E-03	1.42E-02	NO	NO
9302-0000-013F	3.62E-03	2.12E-02	NO	NO
9302-0000-014F	2.85E-03	4.64E-03	NO	NO
9302-0000-015F	3.24E-03	1.11E-02	NO	NO

Performed By: Robert Massingill Date: 4-19-07

Independent Review: [Signature] DWOJTKOWIAK Date: 4/19/07

Preliminary Data Review Form - Judgemental Samples

Survey Unit: 9302- 0000
 Survey Unit Name: Northwest Protected Area Grounds
 Classification: 3
 Survey Media: Soil
 Type of Survey: Final Status Survey
 Type of Measurement: Gross Measurement
 Number of Measurements: 4
 Operational DCGL: 1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60	Sr-90
Minimum Value:	-3.68E-03	-1.34E-02	0.00E+00
Maximum Value:	2.05E-02	3.52E-02	0.00E+00
Mean:	9.52E-03	3.94E-03	0.00E+00
Median:	1.06E-02	-3.03E-03	0.00E+00
Standard Deviation:	1.28E-02	2.16E-02	0.00E+00

NUMBER	RADIONUCLIDE CONCENTRATION (pCi/g)						
	Cs-137	Cs ID'ed?	Co-60	Co ID'ed	Sr-90	Sr ID'ed	> DCGL
9302-0000-016B	2.04E-02	NO	3.52E-02	NO	0.00E+00	NO	NO
9302-0000-017B	2.05E-02	NO	1.05E-04	NO	0.00E+00	NO	NO
9302-0000-018B	-3.68E-03	NO	-6.16E-03	NO	0.00E+00	NO	NO
9302-0000-019I	8.61E-04	NO	-1.34E-02	NO	0.00E+00	NO	NO

Performed By: Robert Masserjill Date: 4-17-07
 Independent Review: D. WONTKAWIAK Date: 4/19/07

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000
RELEASE RECORD

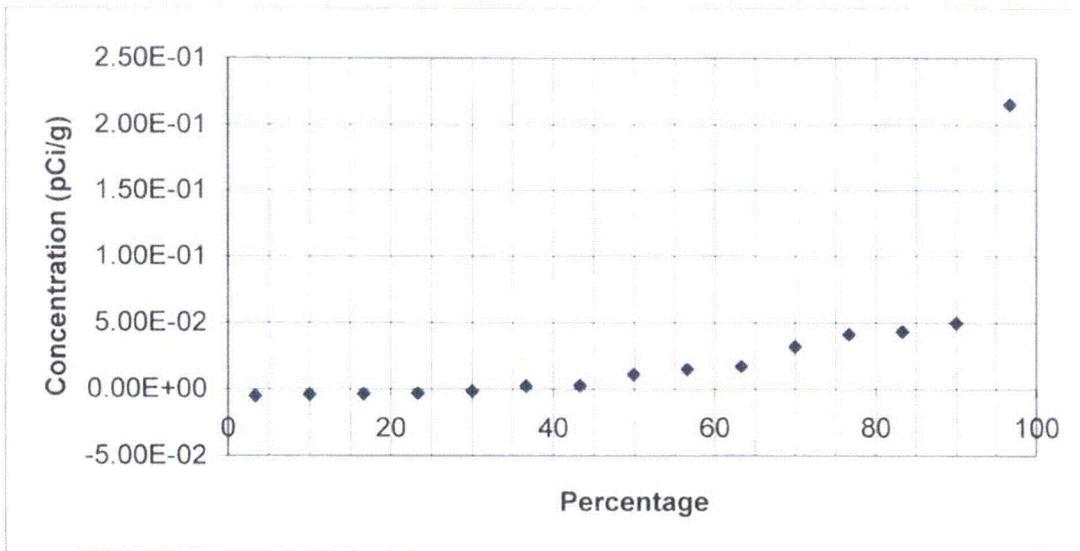
**ATTACHMENT 4B
(GRAPHICAL REPRESENTATION OF
DATA)**

Quantile Plot For Cesium - 137

Survey Unit: 9302-0000

Survey Unit Name: Northwest Protected Area Grounds

Mean: 2.74E-02 pCi/g



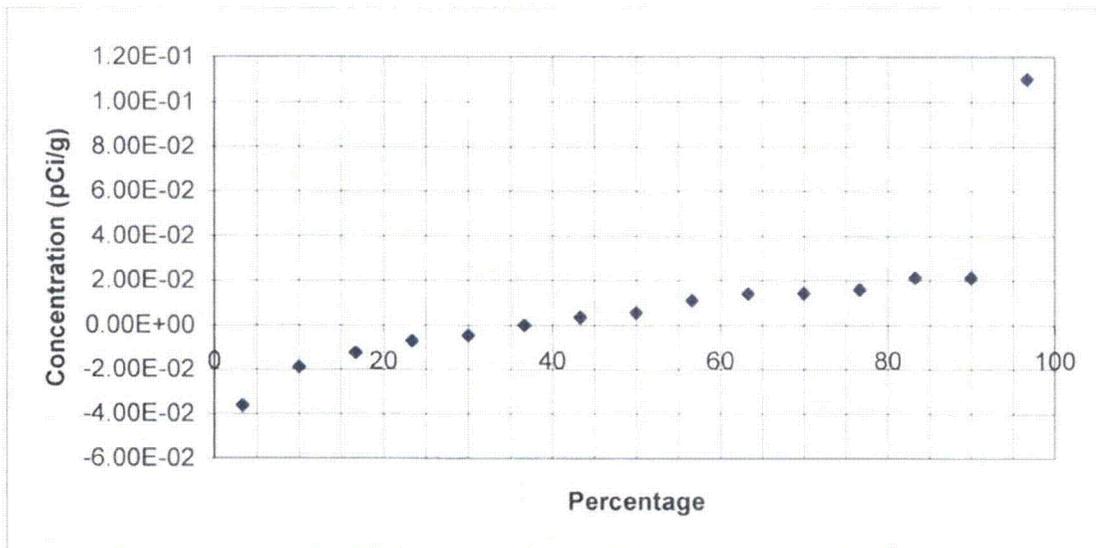
Cs-137	Rank	Percentage
-5.37E-03	1	3 %
-4.12E-03	2	10 %
-3.62E-03	3	17 %
-3.24E-03	4	23 %
-1.61E-03	5	30 %
2.27E-03	6	37 %
2.85E-03	7	43 %
1.09E-02	8	50 %
1.48E-02	9	57 %
1.70E-02	10	63 %
3.19E-02	11	70 %
4.11E-02	12	77 %
4.31E-02	13	83 %
4.96E-02	14	90 %
2.15E-01	15	97 %

Prepared By: Robert Masserill
 Reviewed By: D. Wojtkowiak

Date: 4-17-07
 Date: 4/19/07

Quantile Plot For Cobalt - 60

Survey Unit: 9302-0000
 Survey Unit Name: Northwest Protected Area Grounds
 Mean: 8.26E-03 pCi/g



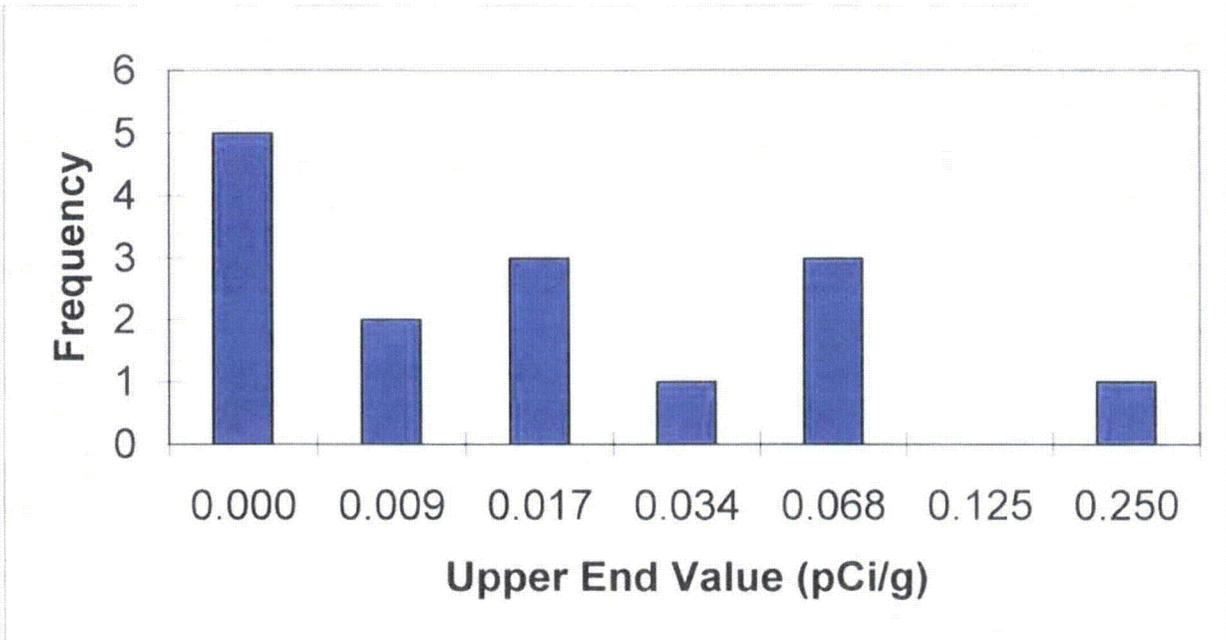
Co-60	Rank	Percentage
-3.63E-02	1	3 %
-1.89E-02	2	10 %
-1.24E-02	3	17 %
-7.14E-03	4	23 %
-4.64E-03	5	30 %
6.46E-05	6	37 %
3.59E-03	7	43 %
5.63E-03	8	50 %
1.11E-02	9	57 %
1.40E-02	10	63 %
1.42E-02	11	70 %
1.59E-02	12	77 %
2.12E-02	13	83 %
2.12E-02	14	90 %
1.10E-01	15	97 %

Prepared By: Robert Massengill
 Reviewed By: D. J. Wajtko

Date: 4-19-07
 Date: 4/19/07

Frequency Plot For Cesium-137

Survey Unit: 9302-0000
 Survey Unit Name: Northwest Protected Area Grounds
 Mean: 0.027 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
0.000	5	33%
0.009	2	13%
0.017	3	20%
0.034	1	7%
0.068	3	20%
0.125	0	0%
0.250	1	7%
Total	15	100%

Prepared By: Robert Massengill

Date: 4-17-07

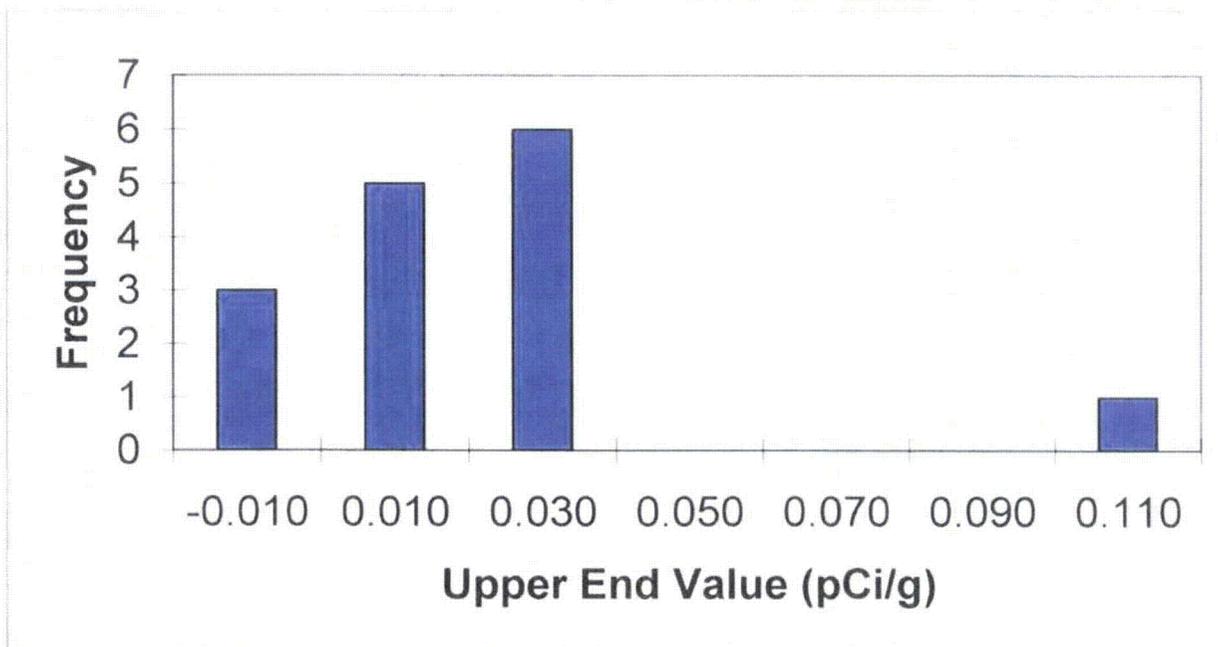
Reviewed By: [Signature] WOLKOWIAK

Date: 4/19/07

Frequency Plot For Cobalt-60

Survey Unit: 9302-0000
 Survey Unit Name: Northwest Protected Area Grounds

Mean: 0.008 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
-0.010	3	20%
0.010	5	33%
0.030	6	40%
0.050	0	0%
0.070	0	0%
0.090	0	0%
0.110	1	7%
Total	15	100%

Prepared By: Robert Massengill

Date: 7-17-07

Reviewed By: [Signature] D. WOSTKOWIAK

Date: 4/19/07

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000
RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Unit Number: 9302-0000					
Survey Unit Name: Northwest Protected Area Grounds					
WP&IR#: NA					
Classification: 3		TYPE I (α error):0.05	TYPE I (β error):0.05		
Radionuclides:		Cs-137	Co-60	Sr-90	
Operational DCGL (pCi/g):		4.75	2.29		
Results Cs-137	Results Co-60	Weighted Sum (W_s)	DCGL-Result	Sign	
1.09E-02	5.63E-03	2.46E-03	9.98E-01	1	
4.31E-02	3.59E-03	1.57E-03	9.98E-01	1	
4.11E-02	-1.89E-02	-8.25E-03	1.01E+00	1	
-5.37E-03	-7.14E-03	-3.12E-03	1.00E+00	1	
2.27E-03	-1.24E-02	-4.94E-03	1.00E+00	1	
1.48E-02	7.60E-03	1.24E-02	9.88E-01	1	
4.96E-02	1.59E-02	1.74E-02	9.83E-01	1	
-1.61E-03	-3.63E-02	-1.62E-02	1.02E+00	1	
1.70E-02	6.46E-05	3.60E-03	9.96E-01	1	
2.15E-01	1.10E-01	9.33E-02	9.07E-01	1	
3.19E-02	1.40E-02	1.28E-02	9.87E-01	1	
-4.12E-03	1.42E-02	5.33E-03	9.95E-01	1	
-3.62E-03	2.12E-02	8.50E-03	9.92E-01	1	
2.85E-03	-4.64E-03	-1.43E-03	1.00E+00	1	
-3.24E-03	1.11E-02	4.85E-03	9.95E-01	1	
Number of Positive Differences (S+):			15		

Critical Value: 13

Survey Unit: Meets Acceptance Criterion

Performed By: Robert Massagilt

Date: 4-19-07

Independent Review: [Signature]

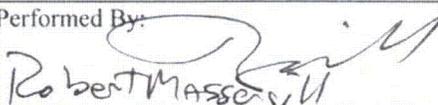
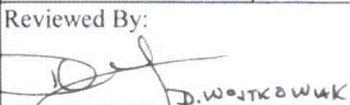
Date: 4/19/07

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

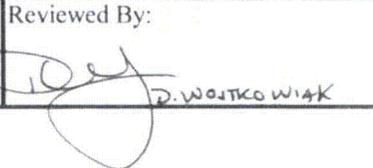
Split Sample Assessment Form

Survey Area#:	9302	Survey Unit #:	0000	Survey Unit Name:	Northwest Protected Area Grounds			
Sample Plan or WPIR#:	NA			SML #:	0			
Sample Description: Comparison of split samples collected from sample measurement location #13 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9302-0000-013F, the comparison sample was 9302-0000-013FS.								
STANDARD					COMPARISON			
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	-3.62E-03	1.38E-02	0	NONE -	1.22E-02	1.02E-02	-3.37	NA
Co-60	2.12E-02	1.33E-02	2	NONE -	-1.58E-04	1.12E-02	-0.01	NA
K-40	1.86E+01	5.75E-01	32	0.75 - 1.33	1.80E+01	4.77E-01	0.97	Y
Comments/Corrective Actions: With regard to the Cs-137 & Co-60 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. However, K-40 was found to be present at an acceptable level of agreement. Therefore, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.			
					Resolution		Agreement Range	
					4	7	0.50	2.00
					8	15	0.60	1.66
					16	50	0.75	1.33
					51	200	0.80	1.25
					> 200		0.85	1.18
Performed By:				Date:			Date:	4/19/07

WPIR – Work Plan and Inspection Record

SML – Sample Measurement Location designation

Split Sample Assessment Form

Survey Area#:	9302	Survey Unit #:	0000	Survey Unit Name:	Northwest Protected Area Grounds				
Sample Plan or WPIR#:	NA			SML #:	0				
Sample Description: Comparison of split samples collected from sample measurement location #15 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9306-0000-015F, the comparison sample was 9306-0000-015FS.									
STANDARD					COMPARISON				
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)	
Cs-137	-3.24E-03	1.44E-02	0	NONE -	-3.76E-03	1.68E-02	1.16	NA	
Co-60	1.11E-02	1.55E-02	1	NONE -	-2.41E-04	1.92E-02	-0.02	NA	
K-40	1.64E+01	7.75E-01	21	0.75 - 1.33	1.55E+01	8.00E-01	0.95	Y	
Comments/Corrective Actions: With regard to the Cs-137 & Co-60 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. However, K-40 was found to be present at an acceptable level of agreement. Therefore, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.				
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					51	200	0.80	1.25	
					> 200		0.85	1.18	
Performed By:				Date:	4-17-07		Reviewed By:		
	Robert Massena				4-17-07			P. Wojtkowiak	
								4/19/07	

WPIR – Work Plan and Inspection Record

SML – Sample Measurement Location designation

NORTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9302-0000
RELEASE RECORD

**ATTACHMENT 4E
(COMPASS DQA WITH POWER CURVE)**



DQA Surface Soil Report

Assessment Summary

Site:	CY-03		
Planner(s):	RWM		
Survey Unit Name:	9302-0000		
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

