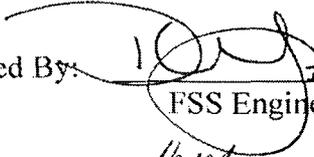
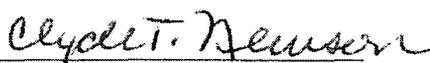


CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
FORMER RADIOLOGICALLY CONTROLLED AREA NORTH
OF THE PRIMARY AUXILIARY BUILDING AND TANK
FARM
SURVEY UNIT 9312-0004

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FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

TABLE OF CONTENTS

1. SURVEY UNIT DESCRIPTION	3
2. CLASSIFICATION BASIS	3
3. DATA QUALITY OBJECTIVES (DQO)	7
4. SURVEY DESIGN	11
5. SURVEY IMPLEMENTATION	14
6. SURVEY RESULTS	15
7. QUALITY CONTROL	20
8. INVESTIGATIONS AND RESULTS	21
9. REMEDIATION AND RESULTS	24
10. CHANGES FROM THE FINAL STATUS SURVEY PLAN	24
11. DATA QUALITY ASSESSMENT (DQA)	24
12. ANOMALIES	25
13. CONCLUSION	25
14. ATTACHMENTS	26
14.1 Attachment 1 – Figures (6 pages including cover)	
14.2 Attachment 2 – Scan Results (4 pages including cover)	
14.3 Attachment 3 – Laboratory Data (117 pages including cover)	
14.4 Attachment 4 – DQA Results (17 pages including covers)	
	TOTAL 170

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

1. SURVEY UNIT DESCRIPTION

Survey Unit 9312-0004 (northern portion of the former Radiologically Controlled Area (RCA)) is designated as Final Status Survey (FSS) Class 1 and has an area of approximately fifteen hundred-eighty six (1,586) square meters and is located approximately five hundred-six feet (506 ft) to the southeast of the site benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The survey unit is bounded as follows: land Survey Unit 9313-0000 to the north (called north as oriented with the north to south flow of the Connecticut River) and west, land Survey Unit 9312-0005 and land Survey Unit 9312-0006 to the south and land Survey Unit 9312-0009 to the east. As a result of demolition and remediation activities, the area topography is mostly flat and de-vegetated. The survey unit has a moderate slope running from east to west.

The reference coordinates associated with this survey unit are E008 through E014 by S065 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 9312-0004 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 "walkdown."

A review of the "*Initial and Supplemental Characterization Reports*" as well as the previous "*Classification Basis Summaries*" was performed. The source documents, the "*Connecticut Yankee Haddam Neck Characterization Report*" and "*Initial Classification for Survey Areas at Connecticut Yankee*", were incorporated by reference in LTP, Revision 0.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

During plant operation, Survey Unit 9312-0004 was the location of significant reactor support structures and systems, encompassing the open land area between the north wall of the Primary Auxiliary Building (PAB), the area designated as the "Tank Farm" and the north boundary of the Radiologically Controlled Area (RCA), including all subsurface drains and utilities. It served as the normal access point for personnel and equipment ingress and egress from the RCA.

The PAB was a concrete structure located along the south boundary of this survey unit that was designed to house systems containing radioactive materials and to contain and control leakage occurring during routine operations as well as unusual conditions. With the exception of various service water, gas and air systems, the majority of the systems within the PAB were radiologically contaminated.

The Tank Farm was an asphalt covered area located to the southeast of this survey unit where the Refueling Water Storage Tank (RWST), the Waste Test Tanks, the Aerated Drains Holdup Tank (ADHUT), the Borated Waste Storage Tank (BWST) and the Recycle Test Tanks (RTT's) were located. Rupture-containment dikes were constructed around the bases of these tanks. In addition, the area also contained sub-grade covered and shielded pipe trenches that housed subsurface piping and conduit associated with the tanks and other adjacent support systems. All of these tanks and systems had contained radioactive liquids over their history and were highly contaminated.

A review of the historical documentation indicated a significant number of operational events that may have impacted Survey Unit 9312-0004. Operational events were considered to be spills and leakage from contaminated systems. These events would have had the most impact on the radiological condition of subsurface structures and footers; and the underlying soil and bedrock prior to system and structural decontamination and demolition. Some of the major events are summarized as follows;

- Diaphragm rupture, valve failure and gasket leakage from components associated with the Refueling Water Storage Tank (RWST) resulted in documented spills of radioactive liquid into the alleyway between the Containment structure and the PAB in November 1973, February 1976, December 1976, February 1978 and January 1979.
- A frozen degassifier line in February 1979 caused the rupture of the diaphragm disc and led to leakage of reactor cavity water into the main stack drain and subsequently onto the surrounding area in the PAB alleyway. The report estimated a release of mixed fission and activation products onto the ground and the storm drains.
- In July of 1979, contaminated water was released onto the stack and surrounding area from the PAB ventilation system.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

- A series of events in September 1979 resulted in the release of steam generator contents into the stack. The steam condensed in the stack ductwork and subsequently leaked 50 to 75 gallons of contaminated water onto the alleyway. All of the liquid was removed and the area was decontaminated.
- The degassifier rupture diaphragm actuated in December 1979 and vented gaseous contents up the stack and liquid contents near the base of the stack. The impacted areas and systems were storm sewers, roof drain lines, stack, stack duct and drain lines and the PAB roof. All impacted areas were remediated.
- In September of 1981 and again in October of 1981, contaminated water overflowed from the RWST hatch onto the nearby ground due to a valve misalignment and the activation of the thermo siphon heater.
- Contaminated water from RWST cleanup hoses leaked onto the alleyway in April 1990. The area was decontaminated and released.
- In September 1990 and July 1994, cracks in the welds located in the base of the RWST led to leakage of contaminated water onto the tank pedestal.
- An improperly fabricated flange led to water leakage from the RWST in November 1991 and January 1992.
- During a rainstorm in August 1997, an overflow of water from the RWST catch basin area to an uncontrolled sand area was observed. Analysis of the water indicated H-3, Co-60 and Cs-137. The Condition Report identified the catch basin overflow as a potential source of historical tritium contamination of the yard drains and external containment mat sump.
- In June 1998, leakages from the RWST floor plates and manway port flanged joints were observed. The water accumulated around the tank foundation and trough areas on the western side of the tank. Analysis of water samples from both leaking areas identified the source of both leakages as the RWST.
- An HP survey in October 1998 revealed loose contamination at levels inside the catch containment at the base of the RWST.

Major demolition and remediation activities began in 2002. All systems and components located inside this survey unit were removed and building structural surfaces were decontaminated to ensure contamination levels were acceptable for controlled demolition. Confirmatory radiological surveys were performed throughout the demolition process. All above grade structures were then demolished to grade.

Outside of the Containment shell, extensive soil remediation was performed in Survey Area 9312. A large excavation was created to the north of the Containment that was designated as Excavation #2. This excavation included the area in the vicinity of the RWST and the PAB corridor. A second large excavation, designated as Excavation #1 was located over the PAB footprint. A third excavation, designated as Excavation #3 was located in the area between the Containment Building and Spent Fuel Building (SFB). Soil was excavated and removed as adjacent structures

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

were demolished. This process continued until bedrock was exposed. Subsurface structures and footings that remained following demolition and excavation include the Containment Mat, the Cable Vault wall, the Service Building east wall, a remnant of the PAB northwest wall, the Waste Disposal Building footing, the "B" Switchgear Building footing and miscellaneous fragments of footings and slabs on the bedrock. As with the Containment basement shell, all excavations were backfilled following the performance of a radiological assessment. No above grade structures currently reside within Survey Unit 9312-0004.

In Survey Area 9312, post-remediation soil samples were taken from the as-left surface soils under two (2) Survey and Sampling Work Plans, SSWP-06-08-000 and SSWP-06-12-001. Thirty-five (35) post remediation surface soil samples were collected from the various locations within Survey Area 9312. All samples were collected and analyzed by gamma spectroscopy by an approved off-site laboratory. Ten (10) of the thirty-five (35) post remediation samples collected were analyzed for the full suite of "Hard-to-Detect" (HTD) radionuclides specified in the LTP, Table 2-12, "*Radionuclides Potentially Present at Haddam Neck Plant*" and as provided in Table 3. Statistical quantities (mean, median and standard deviation) from the 2006 post-remediation survey conducted under SSWP-06-08-000 and SSWP-06-12-001 are provided in Table 1.

Table 1 – Basic Statistical Quantities for Cs-137 and Co-60 from the 2006 Post Remediation Survey

	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value :	1.32E-02	-5.00E-02
Maximum Value :	1.70E+00	1.43E+00
Mean :	2.38E-01	1.08E-01
Median :	1.65E-01	1.46E-02
Standard Deviation :	3.10E-01	2.76E-01

A review of this sample data shows Cs-137 and Co-60 to be the primary radionuclides of concern, with both isotopes reported at fairly low concentrations. The sample population as a whole was evaluated to assess the distribution of the detected radionuclides. The radionuclide distribution percentage for each sample in the population was calculated by dividing the concentration of each detected radionuclide by the total activity concentration in the sample, expressing the abundance of the specific nuclide in the sample compared against the total activity. The mean radionuclide distribution was then calculated by taking the average of the individual sample distribution fractions. The results are provided in Table 2.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Detected Radionuclide	Distribution Fraction
Cs-137	0.689
Co-60	0.311

No HTD radionuclides were positively identified in concentrations meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). Radionuclide screening or de-selection is a process where 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. While Sr-90 was not identified in the soil characterization results, it was decided to include Sr-90 as a radionuclide of concern for this survey unit as Sr-90 was prevalent in the soils prior to remediation. Therefore, all volumetric soil samples taken as part of the survey design for this survey unit were subjected to direct analysis for Sr-90.

The FSS Engineer performed a visual inspection and walk-down during January 2007 to assess the physical condition of the survey unit, evaluate access points, 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 the identification of radioactive material above the Derived Concentration Guideline Levels (DCGLs), and the need for radiological remediation, it was concluded that there was some probability for residual radioactivity in concentrations greater than the DCGLs, justifying a final survey unit classification of Class 1 (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.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

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.

The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9312-0004 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 Total Effective Dose Equivalent (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.

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

This survey unit is considered impacted by future groundwater radioactive contamination, as there are underground foundations containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater, the third dose component, is bounded by two (2) mrem/yr TEDE.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Equation 2

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

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 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 3.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 3 – Radionuclide Specific Base Case Soil DCGLs, Operational DCGLs and Required Minimum Detectable Concentrations (MDCs)

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pC/g) ⁽²⁾	Operational DCGL (pC/g) ⁽³⁾	Required MDC (pC/g) ⁽⁴⁾
H-3	4.12E+02	2.47E+02	1.65E+01
C-14	5.66E+00	3.40E+00	2.26E-01
Mn-54	1.74E+01	1.04E+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	9.30E-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	4.28E+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	6.06E+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
Am-241 ⁽⁵⁾	2.58E+01	1.55E+01	1.03E+00
Pu-241	8.70E+02	5.22E+02	3.48E+01
Cm-243/244	2.90E+01	1.74E+01	1.16E+00

- (1) Bold indicates those radionuclides considered Hard to Detect (HTD)
- (2) The Base Case Soil DCGL(s) are specified by the LTP in Chapter 6 and are equivalent to twenty-five (25) mrem/yr TEDE
- (3) The Operational DCGL is equivalent to achieving fifteen (15) mrem/yr TEDE
- (4) The required MDC is equivalent to achieving one (1) mrem/yr TEDE
- (5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Soil samples were collected in 2006 to establish the radiological condition of Survey Unit 9312-0004 for FSS. Cs-137 and Co-60 were the two (2) gamma emitting radionuclides reported in concentrations with the potential for exceeding the release criteria. Sr-90 was included as a radionuclide of concern due to its prevalence in the soil prior to remediation. The characterization data were used for the survey design and are provided in Table 1.

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

As part of the DQOs applied to laboratory processes, analysis results were reported as actual calculated results. Results reported as less than Minimum Detectable Concentration (MDC) were not accepted for FSS. Sample report summaries included unique sample identification, analytical method, radionuclide, result, and uncertainty to two (2) standard deviations, laboratory data qualifiers, units, and the required and observed MDC.

4. SURVEY DESIGN

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. Guidance for preparing FSS plans is provided in Procedure RPM 5.1-11, "*Preparation of Final Status Survey Plans*". The FSS plan uses an integrated sample design that combines scanning surveys and sampling which can be either random or biased.

The DQO process determined that Cs-137, Co-60 and Sr-90 would be the radionuclides of concern in Survey Unit 9312-0004 (refer to Section 3). The characterization survey did not include any other additional HTD radionuclides of concern for this survey unit. As Sr-90 concentrations were determined by direct analysis, surrogate DCGLs were not required as part of the survey design 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.

As the survey unit is classified as a Class 1 surface soils area, and discrete, elevated areas of contamination was possible, the application of the Elevated Measurement Comparison (EMC) remained an option.

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.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

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 0.73 to achieve a relative shift (Δ/σ) in the range of 1 and 3. The resulting adjusted relative shift was 2.0. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10CFR20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. The survey design specified fifteen (15) surface soil samples for non-parametric statistical testing. Based upon a review of the historical information and Characterization Survey data, the acquisition of additional judgmental surface soil samples from within this survey unit was deemed unnecessary.

The grid pattern and locations of the soil samples were determined using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, "*Identifying, and Marking Surface Sample Locations for Final Status Survey.*" Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy. A systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 1 area.

Sample locations were identified using AutoCAD-LT, a commercially available plotting software package with coordinates consistent with the Connecticut State Plane System. These coordinates were integrated with a GPS to locate sample locations in the field. Sample Measurement Locations for the design are listed with the GPS coordinates in Table 4.

Table 4 - Sample Measurement Locations with Associated GPS Coordinates		
Designation	Northing	Easting
9312-0004-001F	236829.64	668622.57
9312-0004-002F	236829.64	668658.88
9312-0004-003F	236798.19	668604.41
9312-0004-004F	236798.19	668640.72
9312-0004-005F	236766.74	668549.94
9312-0004-006F	236766.74	668586.25
9312-0004-007F	236766.74	668622.57
9312-0004-008F	236735.29	668531.78

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 4 - (continued)

Designation	Northing	Easting
9312-0004-009F	236735.29	668568.10
9312-0004-010F	236703.84	668513.62
9312-0004-011F	236703.84	668549.94
9312-0004-012F	236672.39	668495.47
9312-0004-013F	236672.39	668531.78
9312-0004-014F	236640.94	668477.31
9312-0004-015F	236640.94	668513.62

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 3.

The LTP requires a minimum of 5% of the samples taken for non-parametric statistical testing be selected for QC evaluation. The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*," included the collection of one (1) soil sample for "split sample" analysis by the off-site laboratory. This location was selected randomly using the Microsoft Excel "RANDBETWEEN" function.

The LTP specifies a required scanning coverage of 100% for outdoor Class 1 areas.

For this Class 1 survey unit, the "Investigation Level" for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8. Table 5 provides a synopsis of the survey design.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 5 – Synopsis of the Survey Design		
Feature	Design Criteria	Basis
Survey Unit Land Area	1,586 m ²	Based on AutoCAD-LT
Number of Measurements	15 (15 systematic grid)	Type 1 and Type 2 errors were 0.05, sigma was 0.14 pCi/g, the LBGR was set at 0.73 to achieve a Relative Shift in the range of 1 and 3
Grid Spacing	11.18 m	Based on triangular grid
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 1 survey unit
Scan Survey Area Coverage	Approximately 100% of the area	The LTP requires 100% area coverage for Class 1 survey units
Scan Investigation Level	An instrument response greater than the Scan MDC(DCGL _{EMC}) of 2,859 cpm plus ambient background	Based upon a Minimum Detectable Count Rate (MDCR) of 2,020 cpm and a corresponding MDC _{scan} of 13.92 pCi/g Cs-137 and 3.23 pCi/g Co-60

(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)

5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0047. The WP&IR package included a detailed FSS plan, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The “Daily Survey Journal” was used to document field activities and other information pertaining to the FSS.

A single scan area was established that constituted approximately 100% of the surface area of Survey Unit 9312-0004. 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 7,820 counts per minute (cpm) up to 12,000 cpm.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

The scan area was 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 100% 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 circle was established around the sample flag or paint mark was scanned for elevated radiation levels.

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

Two (2) samples (9312-0004-007F and 9312-0004-012F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of one (1) sample (9312-0004-005F) for "split sample" analysis.

6. SURVEY RESULTS

All field survey activities were conducted between January 30, 2007 and February 13, 2007.

The sample locations identified in the FSS plan were scanned over approximately a one (1) meter radius for elevated radiation levels. Table 6 provides an overview of the scan results for sample measurement locations. Scan results are provided in Attachment 2.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 6 - Scan Results for Sample Measurement Locations			
Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level
1	9.99	12.54	NO
2	11.20	13.16	NO
3	9.24	11.92	NO
4	10.50	11.46	NO
5	9.80	11.07	NO
6	8.14	11.01	NO
7	8.24	11.23	NO
8	9.34	11.29	NO
9	9.81	12.55	NO
10	8.35	11.69	NO
11	10.50	11.78	NO
12	8.24	11.27	NO
13	9.16	11.43	NO
14	10.20	13.06	NO
15	8.57	11.04	NO

(1) The action level is based on a measurement in accordance with the FSS plan (MDC(DCGL_{EMC}) of 2,859 cpm plus ambient background)

The scan area, that comprised approximately 100% of the total surface area for the survey unit, was scanned for elevated radiation levels. The area was scanned in accordance with the FSS plan on January 30, 2007.

Twenty-six (26) scan strips were established in this survey unit. One elevated measurement location was identified during scanning. Table 7 provides an overview of the scan area survey. Scan results are provided in Attachment 2.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 7 - Scan Area Results

Scan Strips	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification ⁽²⁾	Investigation Sample
1 thru 10	9.85	13.26	None	None
11 thru 20	17.10	12.66	9312-04-ER-00-19-1	9312-0004-016I
21 thru 26	12.50	14.86	None	None

(1) The action level is based on a measurement in accordance with the FSS plan (MDC(DCGL_{EMC}) of 2,859 cpm plus ambient background)

(2) ER is an abbreviation associated with the barcodes used in the field where ER stands for Elevated Reading.

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 and the single investigation sample using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDCs. Gamma spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). However, Cs-137 and Co-60 were the only two gamma-emitting radionuclides reported in any appreciable concentration.

Cs-137 was identified in ten (10) and Co-60 was identified in three (3) 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 slightly higher than expected environmental levels for Cs-137 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 8.

Table 8 - Summary of Gamma Spectroscopy Results for Surface Soil Samples Comprising the Statistical Sample Population

Sample Number	Cs-137 pCi/g	Co-60 pCi/g
9312-0004-001F	4.93E-02	1.03E-02
9312-0004-002F	8.71E-02	-3.14E-05
9312-0004-003F	1.55E-01	2.69E-02
9312-0004-004F	1.09E-01	1.48E-02

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 8 - (continued)

Sample Number	Cs-137 pCi/g	Co-60 pCi/g
9312-0004-005F	6.04E-01	9.47E-02
9312-0004-006F	1.10E-01	3.61E-02
9312-0004-007F	3.42E-02	3.16E-02
9312-0004-008F	1.99E-01	1.26E-02
9312-0004-009F	4.87E-02	3.24E-02
9312-0004-010F	-7.84E-03	-1.23E-02
9312-0004-011F	2.11E-03	-8.59E-03
9312-0004-012F	8.06E-03	-4.29E-04
9312-0004-013F	1.41E-02	6.56E-03
9312-0004-014F	2.28E-01	0.00E+00
9312-0004-015F	2.30E-02	-1.28E-02

In addition to Cs-137 and Co-60, Sr-90 was also identified during the DQO process as a radionuclide of concern. Subsequently, all samples were subjected to analysis by gas proportional counting for Sr-90. All analyses met the required minimum MDC.

Sr-90 was positively identified (i.e., a result greater than two (2) standard deviations uncertainty) in nine (9) of the fifteen (15) samples collected for non-parametric statistical testing. The results of the Sr-90 analysis for the statistical sample population are provided below in Table 9.

**Table 9 - Summary of Sr-90 Analysis Results for Surface Soil Samples
Comprising the Statistical Sample Population**

Sample Number	Sr-90 pCi/g
9312-0004-001F	2.60E-02
9312-0004-002F	5.95E-02
9312-0004-003F	3.38E-02
9312-0004-004F	5.97E-02
9312-0004-005F	2.99E-02
9312-0004-006F	7.71E-03

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 9 - (continued)	
Sample Number	Sr-90 pCi/g
9312-0004-007F	1.57E-02
9312-0004-008F	3.10E-02
9312-0004-009F	6.24E-02
9312-0004-010F	5.89E-02
9312-0004-011F	6.31E-02
9312-0004-012F	3.05E-03
9312-0004-013F	1.83E-02
9312-0004-014F	-3.31E-03
9312-0004-015F	5.67E-03

In addition to Sr-90, the off-site laboratory also processed, as required by the sample plan, two (2) samples for the full suite of HTD radionuclides as specified in LTP, Table 2-12, “*Radionuclides Potentially Present at Haddam Neck Plant*” and as provided in Table 3. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses performed met the required minimum MDC. No additional HTD radionuclides were positively identified (i.e., a result greater than two (2) standard deviations uncertainty).

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 combination of the fractions of each detected radionuclide against their respective Operational DCGL must be less than or equal to one (1). 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 9312-0004 are provided in Table 10 below.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 10 – Results of Unity Calculation for Surface Soil Samples Comprising the Statistical Sample Population⁽¹⁾⁽²⁾

Sample Number	Fraction of the Operational DCGL			Unity
	Cs-137	Co-60	Sr-90	
9312-0004-001F	0.010	-	0.028	0.038
9312-0004-002F	0.018	-	0.064	0.082
9312-0004-003F	0.033	0.012	0.036	0.081
9312-0004-004F	0.023	-	0.064	0.087
9312-0004-005F	0.127	0.041	0.032	0.201
9312-0004-006F	0.023	0.016	-	0.039
9312-0004-007F	0.007	-	-	0.007
9312-0004-008F	0.042	-	0.033	0.075
9312-0004-009F	-	-	0.067	0.067
9312-0004-010F	-	-	0.063	0.063
9312-0004-011F	-	-	0.068	0.068
9312-0004-012F	-	-	-	-
9312-0004-013F	-	-	-	0.000
9312-0004-014F	0.048	-	-	0.048
9312-0004-015F	0.005	-	-	0.005

(1) “-” indicate that the radionuclide was not positively detected in the sample

(2) The Operational DCGL from Table 2 is 4.75 $\mu\text{Ci/g}$ for Cs-137, 2.29 $\mu\text{Ci/g}$ for Co-60 and 0.93 $\mu\text{Ci/g}$ for Sr-90 to achieve fifteen (15) mrem/yr TEDE respectively.

7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. One sample location was selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, “*Split Sample Assessment for Final Status Survey*”. Evaluation using the reported results for Cs-137 resulted in acceptable agreement between the field-split results at this location.

The sample analysis vendor, General Engineering Laboratories, LLC, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachments 3 and 4 for data and data quality analysis results

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

8. INVESTIGATIONS AND RESULTS

One (1) investigative surface soil sample was collected from a scan area exhibiting elevated scan readings. This soil sample was analyzed for Cs-137, Co-60 and Sr-90 in accordance with the DQOs used during the survey design. The Investigative Sample designation is listed with the GPS coordinates in Table 11.

Table 11 - Investigative Sample Designation with Associated GPS Coordinates		
Designation	Northing	Easting
9312-0004-016-I	236786.36	668570.69

During the process of preparing this sample for transfer to the off-site laboratory in accordance with Procedure RPM 5.1-5, "Chain of Custody for Final Status Survey Samples", surveys performed discovered a small discrete particle of elevated activity within the soil sample matrix. The particle was segregated and removed from the soil matrix and analyzed using gamma spectroscopy by the on-site laboratory. Results identified Co-60 with an indicated activity of 0.128 μ Ci. Soil sample 9312-0004-016-I, minus the segregated Co-60 particle, was transferred to the off-site laboratory for analysis. The sample is denoted as shown in Table 7, with the sample results shown in Table 12 below.

Table 12 - Investigation Sample Results				
Sample Number	Cs-137 ρCi/g	Co-60 ρCi/g	Sr-90 ρCi/g	Unity Fraction (1)
9312-0004-016-I	2.38E-01	3.60E+00	3.79E-02	1.663

(1) The Operational DCGL from Table 2 is 4.75 ρ Ci/g for Cs-137, 2.29 ρ Ci/g for Co-60 and 0.93 ρ Ci/g for Sr-90 to achieve fifteen (15) mrem/yr TEDE respectively.

Cs-137, Co-60 and Sr-90 were all positively identified. The sample contained sufficient concentrations of Co-60 to exceed the Operational DCGL of 2.29 ρ Ci/g and sufficient concentrations of Cs-137, Co-60 and Sr-90 to exceed the "unity rule" parameter of "1". It was subsequently determined that five (5) additional surface soil samples would be necessary to adequately bound the area of elevated activity identified by the results of the investigation sample. Bounding sample locations were identified in Addendum 1 to the Final Status Survey Plan.

An additional soil sample (sample number 9312-0004-017-I) was taken at the same location as sample number 9312-0004-016-I. In addition, four (4) additional samples were taken at a distance of one (1) meter from the location of sample number 9312-0004-016-I, oriented relative to the compass points of north, east, south and west. The sample results and the results of the unity rule calculation for the radionuclides of concern in the bounding sample population are provided in Table 13 below.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 13 - Bounding Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g	Unity Fraction ⁽¹⁾
9312-0004-017-I	1.88E-01	2.19E-01	-1.48E-02	0.135
9312-0004-018-I	1.96E-01	1.62E-02	-4.54E-03	0.041
9312-0004-019-I	7.62E-02	1.25E-02	8.73E-03	0.022
9312-0004-020-I	8.09E-02	1.41E-02	-5.53E-03	0.017
9312-0004-021-I	1.28E-01	0.00E+00	-2.46E-02	0.027

(1) The Operational DCGL from Table 2 is 4.75 pCi/g for Cs-137, 2.29 pCi/g for Co-60 and 0.93 pCi/g for Sr-90 to achieve fifteen (15) mrem/yr TEDE respectively.

Cs-137 was positively identified in all and Co-60 was positively identified in two (2) of the five (5) additional bounding samples. Sr-90 was not positively identified in any of the bounding samples. The sample results indicated that the activity concentration of individual radionuclides were less than their respective Operational DCGL and the sum of all radionuclide fractions in each sample was less than the unity value of one (1). Subsequently, the area of elevated activity was deemed to be adequately bounded.

The Elevated Measurement Comparison (EMC) protocol was applied to the area of elevated activity in accordance with LTP Section 5.8.3 and 5.4.7.4. The value used for the area factor for each area was determined from the area bounded by the adjacent samples at or below the DCGL_{op}. Due to the fact that the bounding samples were taken at a distance of one (1) meter from the area identified as elevated, the elevated area size was determined to be two (2) square meters.

An Area Factor corresponding to the size of the elevated area was selected from Table 5-5, *Area Factor for the Resident Farmer Scenario*, in Section 5.4.7.4 of the LTP. The Area Factor selected is provided in Table 14.

Table 14 - Selected Area Factor for Elevated Area

Area Size: 2 m ² Area Factor Size: 2 m ²	
Co-60	6.67
Sr-90	616.00
Cs-137	14.10

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Using the Area Factors presented in Table 14 and the results of the soil samples, the following EMC calculation was deduced;

Equation 4

$$\frac{\delta}{DCGL_{op}} + \frac{C_{elevated1} - \delta}{(AreaFactor) \times DCGL_{op}} + \frac{C_{elevatedi} - \delta}{(AreaFactor) \times DCGL_{op}} \leq 1$$

where:

δ = average concentration outside of the elevated area

$C_{elevated 1, i}$ = average concentration inside elevated area "i"

The average concentration of the area within the survey unit outside of the elevated areas (δ) was calculated by taking the average radionuclide concentration from all surface soil samples and subtracting the radionuclide concentration average from the elevated area. This information is presented in Table 15.

Table 15 - Average Concentration of Radionuclides for Balance of Survey Unit			
	Cs-137	Co-60	Sr-90
DCGL _{op} (pCi/g)	4.75E+00	2.29E+00	9.30E-01
Average Concentration (δ) (pCi/g)	1.17E-01	2.47E-02	2.15E-02
Avg. Fraction of the DCGL	0.025	0.011	0.023
Avg. Unity for Balance of Survey Unit	0.058		

The average concentration of the elevated area is presented in Table 16.

Table 16 - Average Concentration of Radionuclides for Elevated Area			
	Cs-137	Co-60	Sr-90
Area Factor	14.10	6.67	616.00
DCGL _{EMC} (pCi/g):	6.70E+01	1.53E+01	5.73E+02
Avg. Concentration in Elevated Area:	2.38E-01	3.60E+00	7.45E-02
Avg. Concentration - δ :	1.21E-01	3.58E+00	5.30E-02
Avg. Fraction of DCGL:	0.002	0.234	0.000
Avg. Unity for Elevated Area:	0.236		

The sum of the average unity result for the elevated areas and the balance of the survey unit equates to 0.294. As this value is less than one (1), this survey unit passes the unity EMC test.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

9. REMEDIATION AND RESULTS

Radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to FSS. All excavations were characterized and backfilled with "clean" fill prior to performing FSS. In the area where remediation occurred, the ground area is comprised of barren dirt with no vegetation, and the soils have been graded relatively flat to the corresponding elevation of the adjacent survey units. The results for Cs-137 following remediation were well below the Operational DCGL provided in Table 3. 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

An addendum to the FSS plan was initiated on February 13, 2006 to implement the acquisition of additional soil samples necessary to adequately bound the area of elevated activity identified by the investigative sample result.

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 1.

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 17.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

Table 17 – Basic Statistical Quantities for Cs-137, Co-60 and Sr-90 from the Final Status Survey

	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g
DCGL _{op} :	4.75E+00	2.29E+00	9.30E-01
Minimum Value:	-7.84E-03	-1.28E-02	-3.31E-03
Maximum Value:	6.04E-01	9.47E-02	6.31E-02
Mean:	1.11E-01	1.55E-02	3.14E-02
Median:	4.93E-02	1.03E-02	2.99E-02
Standard Deviation:	1.55E-01	2.72E-02	2.39E-02

The range of the data, about four (4) standard deviations for all three radionuclides, was not a particularly large variation. The difference between the mean and median was about 3% to 15% 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 a slight positive skewness as confirmed by the calculated skew of 2.58 for Cs-137, 1.83 for Co-60 and 0.15 for Sr-90.

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

12. ANOMALIES

A small discrete particle exhibiting elevated activity was removed from the soil matrix of investigative soil sample 9312-0004-016-I. Analysis of the particle by the on-site laboratory indicated 0.128 µCi of Co-60. The particle was segregated and properly disposed of as radioactive waste. Scan surveys of the area and subsequent bounding soil samples indicate that no additional discrete particles were present.

13. CONCLUSION

Survey Unit 9312-0004 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved.

An EMC calculation was performed for an area of elevated activity in accordance with LTP Section 5.8.3 and Equation 4 of this report. The results indicated that the area was less than unity. No further action is warranted. See Tables 13 through 16 of this report for specific information with regard to the EMC calculation.

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

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

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 1.

The dose contribution from soil is 0.96 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 containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater, the third dose component, is bounded by 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 4.96 mrem/yr TEDE. Therefore, Survey Unit 9312-0004 is acceptable for unrestricted release.

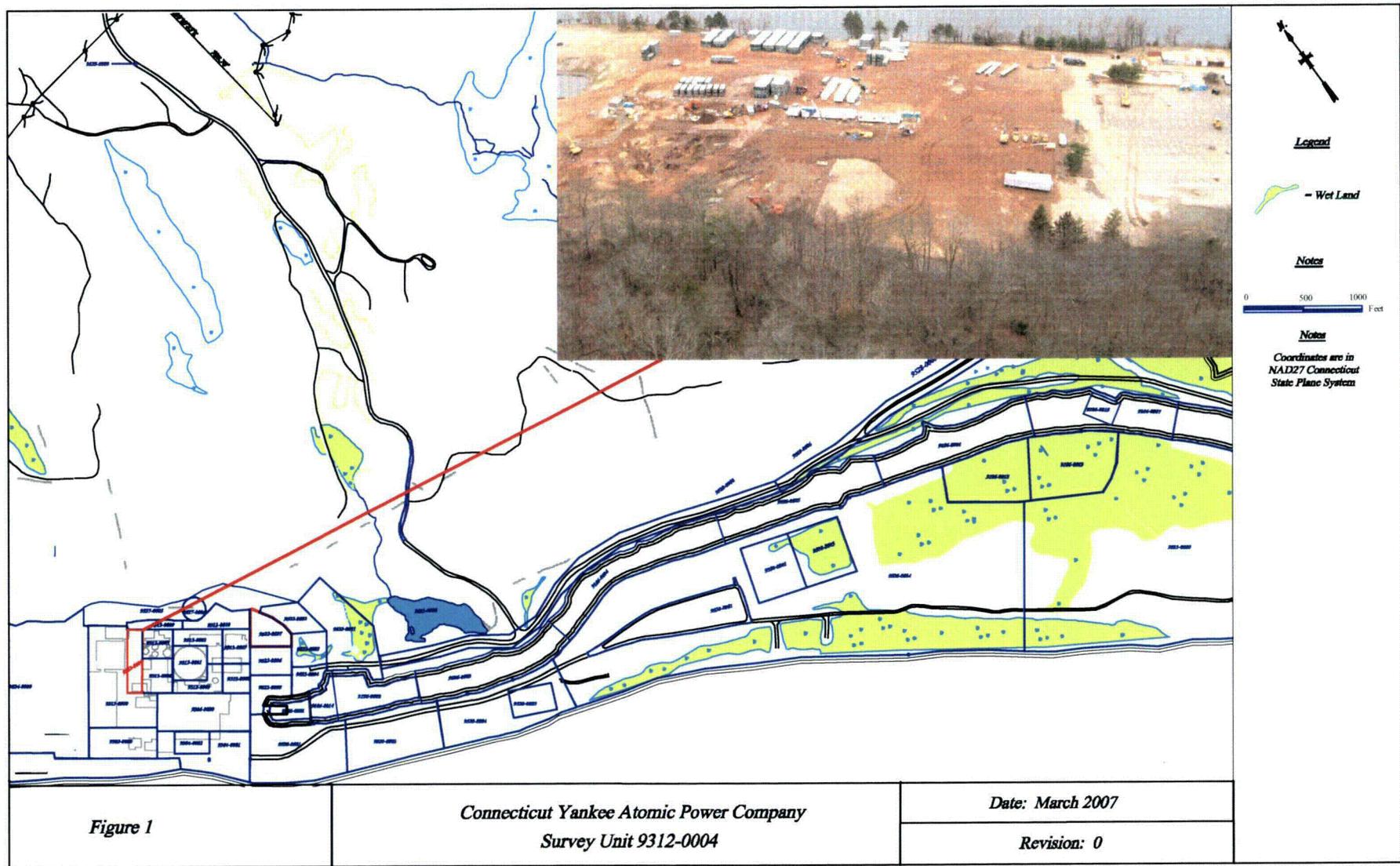
14. ATTACHMENTS

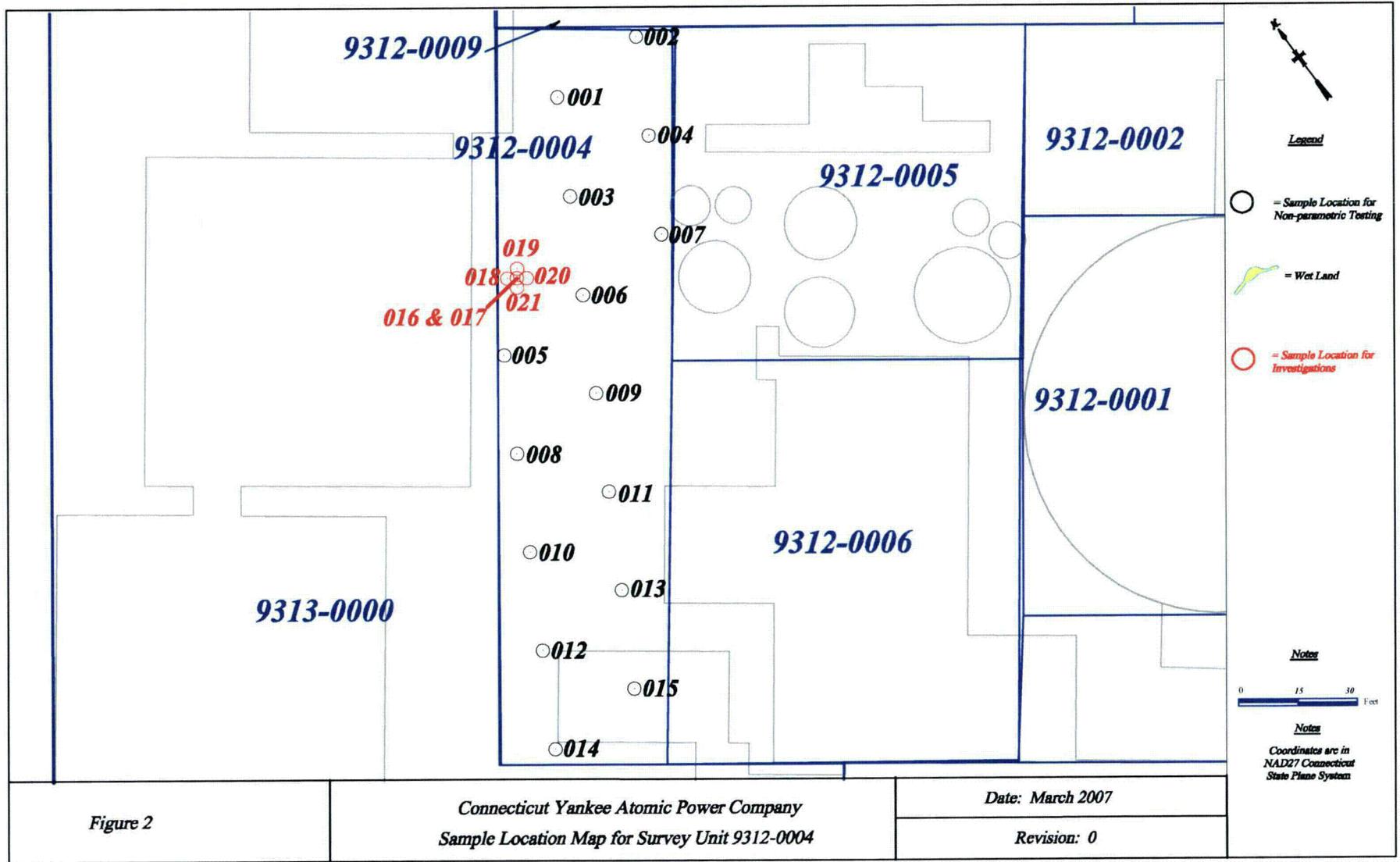
- 14.1 Attachment 1 – Figures
- 14.2 Attachment 2 – Scan Results
- 14.3 Attachment 3 – Laboratory Results
- 14.4 Attachment 4 – DQA Results

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

ATTACHMENT 1 (FIGURES)





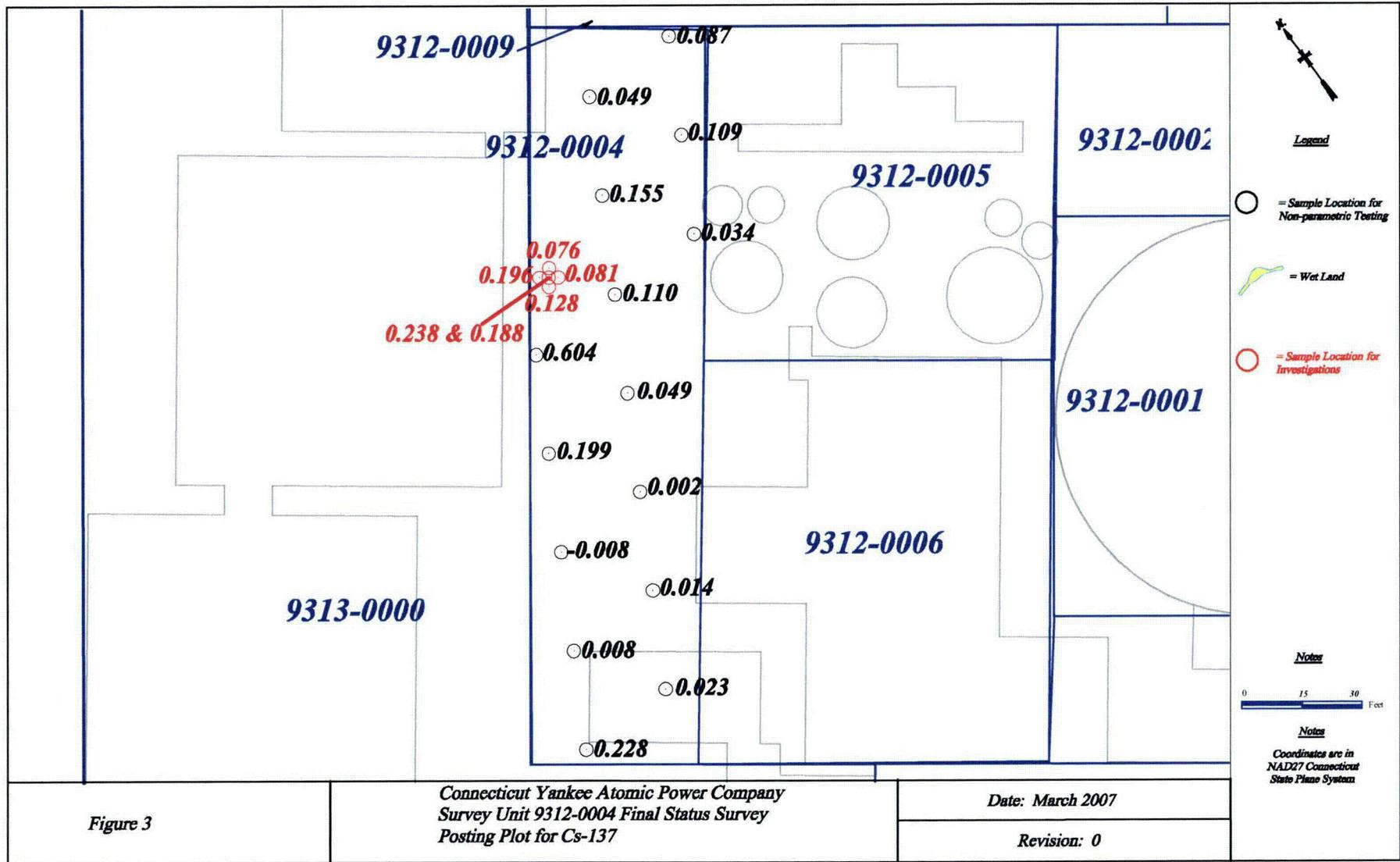


Figure 3

Connecticut Yankee Atomic Power Company
 Survey Unit 9312-0004 Final Status Survey
 Posting Plot for Cs-137

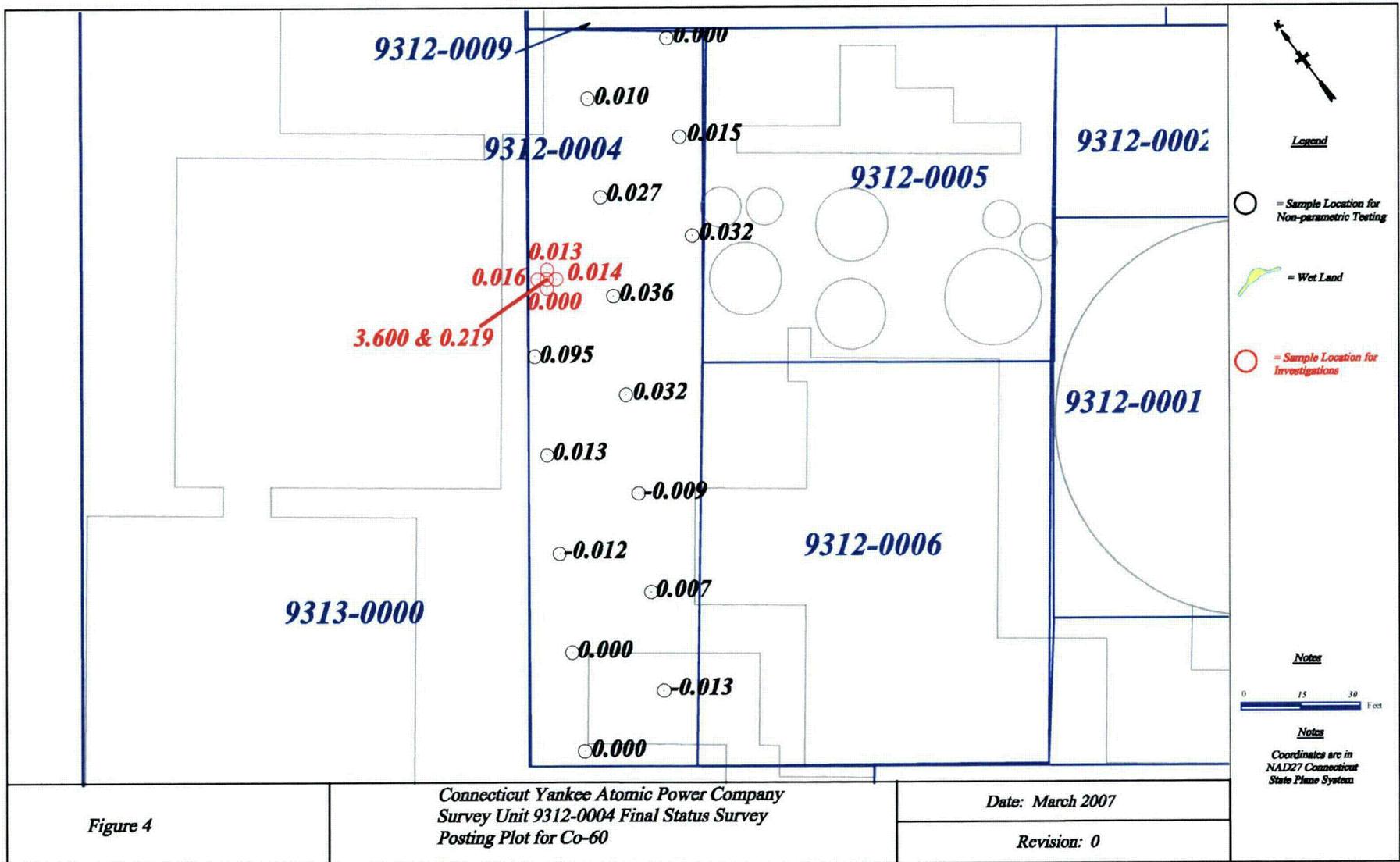
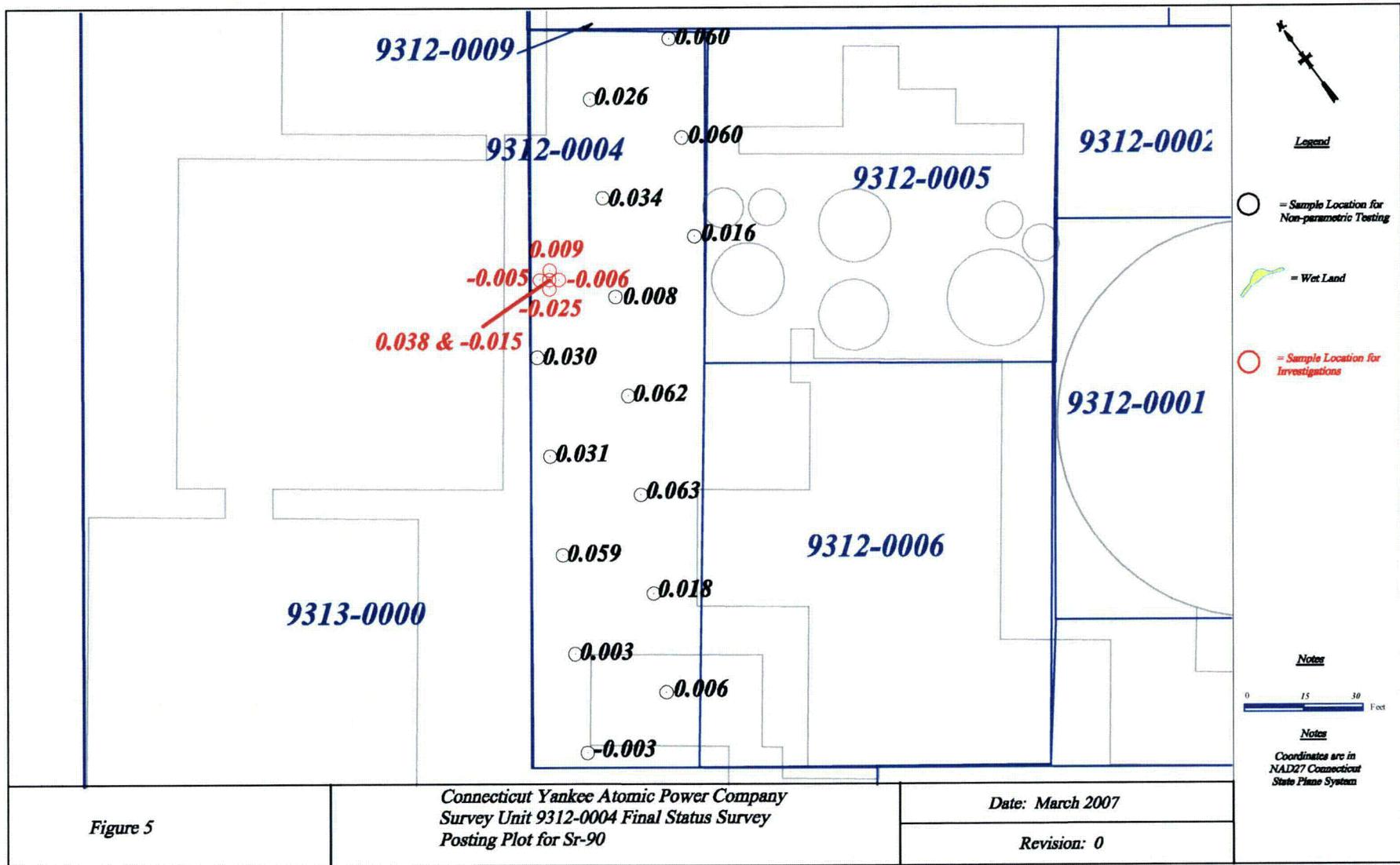


Figure 4

Connecticut Yankee Atomic Power Company
Survey Unit 9312-0004 Final Status Survey
Posting Plot for Co-60

Date: March 2007

Revision: 0



Survey Unit 9312-0004

**Scan Survey Results
Sample Location Scans**

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9312-04-BL-00-01-0	1/30/2007	13:22:00	9.68E+03			1117	1008
9312-04-SL-00-01-0	1/30/2007	13:23:00	9.99E+03	1.25E+04		1117	1008
9312-04-BL-00-02-0	1/30/2007	13:24:00	1.03E+04			1117	1008
9312-04-SL-00-02-0	1/30/2007	13:25:00	1.12E+04	1.32E+04		1117	1008
9312-04-BL-00-03-0	1/30/2007	13:26:00	9.06E+03			1117	1008
9312-04-SL-00-03-0	1/30/2007	13:27:00	9.24E+03	1.19E+04		1117	1008
9312-04-BL-00-04-0	1/30/2007	13:28:00	8.60E+03			1117	1008
9312-04-SL-00-04-0	1/30/2007	13:28:00	1.05E+04	1.15E+04		1117	1008
9312-04-BL-00-05-0	1/30/2007	13:31:00	8.21E+03			1117	1008
9312-04-SL-00-05-0	1/30/2007	13:31:00	9.80E+03	1.11E+04		1117	1008
9312-04-BL-00-06-0	1/30/2007	13:33:00	8.15E+03			1117	1008
9312-04-SL-00-06-0	1/30/2007	13:34:00	8.14E+03	1.10E+04		1117	1008
9312-04-BL-00-07-0	1/30/2007	13:34:00	8.37E+03			1117	1008
9312-04-SL-00-07-0	1/30/2007	13:36:00	8.24E+03	1.12E+04		1117	1008
9312-04-BL-00-08-0	1/30/2007	13:37:00	8.43E+03			1117	1008
9312-04-SL-00-08-0	1/30/2007	13:38:00	9.34E+03	1.13E+04		1117	1008
9312-04-BL-00-09-0	1/30/2007	13:40:00	9.69E+03			1117	1008
9312-04-SL-00-09-0	1/30/2007	13:40:00	9.81E+03	1.25E+04		1117	1008
9312-04-BL-00-10-0	1/30/2007	13:45:00	8.83E+03			1117	1008
9312-04-SL-00-10-0	1/30/2007	13:46:00	8.35E+03	1.17E+04		1117	1008
9312-04-BL-00-11-0	1/30/2007	13:47:00	8.92E+03			1117	1008
9312-04-SL-00-11-0	1/30/2007	13:48:00	1.05E+04	1.18E+04		1117	1008
9312-04-BL-00-12-0	1/30/2007	13:49:00	8.41E+03			1117	1008
9312-04-SL-00-12-0	1/30/2007	13:50:00	8.24E+03	1.13E+04		1117	1008
9312-04-BL-00-13-0	1/30/2007	13:52:00	8.57E+03			1117	1008
9312-04-SL-00-13-0	1/30/2007	13:52:00	9.16E+03	1.14E+04		1117	1008
9312-04-BL-00-14-0	1/30/2007	13:53:00	1.02E+04			1117	1008
9312-04-SL-00-14-0	1/30/2007	13:54:00	1.02E+04	1.31E+04		1117	1008
9312-04-BL-00-15-0	1/30/2007	13:55:00	8.18E+03			1117	1008
9312-04-SL-00-15-0	1/30/2007	13:55:00	8.57E+03	1.10E+04		1117	1008

Survey Unit 9312-0004

**Scan Survey Results
Scan Strip Scans**

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9312-04-BC-00-01-0	1/30/2007	9:40:00	9.38E+03			1111	1004
9312-04-SC-00-01-0	1/30/2007	9:46:00	9.27E+03	1.22E+04		1111	1004
9312-04-BC-00-02-0	1/30/2007	9:47:00	8.93E+03			1111	1004
9312-04-SC-00-02-0	1/30/2007	9:51:00	8.54E+03	1.18E+04		1111	1004
9312-04-BC-00-03-0	1/30/2007	9:52:00	9.89E+03			1111	1004
9312-04-SC-00-03-0	1/30/2007	9:57:00	9.78E+03	1.27E+04		1111	1004
9312-04-BC-00-04-0	1/30/2007	9:58:00	9.05E+03			1111	1004
9312-04-SC-00-04-0	1/30/2007	10:04:00	9.26E+03	1.19E+04		1111	1004
9312-04-BC-00-05-0	1/30/2007	10:05:00	9.06E+03			1111	1004
9312-04-SC-00-05-0	1/30/2007	10:09:00	9.14E+03	1.19E+04		1111	1004
9312-04-BC-00-06-0	1/30/2007	10:10:00	1.04E+04			1111	1004
9312-04-SC-00-06-0	1/30/2007	10:14:00	9.58E+03	1.33E+04		1111	1004
9312-04-BC-00-07-0	1/30/2007	10:15:00	9.15E+03			1111	1004
9312-04-SC-00-07-0	1/30/2007	10:18:00	9.85E+03	1.20E+04		1111	1004
9312-04-BC-00-08-0	1/30/2007	10:19:00	9.56E+03			1111	1004
9312-04-SC-00-08-0	1/30/2007	10:22:00	8.98E+03	1.24E+04		1111	1004
9312-04-BC-00-09-0	1/30/2007	10:23:00	9.04E+03			1111	1004
9312-04-SC-00-09-0	1/30/2007	10:26:00	8.92E+03	1.19E+04		1111	1004
9312-04-BC-00-10-0	1/30/2007	10:29:00	8.62E+03			1111	1004
9312-04-SC-00-10-0	1/30/2007	10:34:00	8.77E+03	1.15E+04		1111	1004
9312-04-BC-00-11-0	1/30/2007	9:39:00	9.80E+03			1117	1008
9312-04-SC-00-11-0	1/30/2007	9:46:00	9.40E+03	1.27E+04		1117	1008
9312-04-BC-00-12-0	1/30/2007	9:46:00	9.35E+03			1117	1008
9312-04-SC-00-12-0	1/30/2007	9:52:00	8.51E+03	1.22E+04		1117	1008
9312-04-BC-00-13-0	1/30/2007	9:54:00	7.82E+03			1117	1008
9312-04-SC-00-13-0	1/30/2007	10:00:00	9.47E+03	1.07E+04		1117	1008
9312-04-BC-00-14-0	1/30/2007	10:00:00	8.87E+03			1117	1008
9312-04-SC-00-14-0	1/30/2007	10:04:00	8.56E+03	1.17E+04		1117	1008
9312-04-BC-00-15-0	1/30/2007	10:06:00	8.62E+03			1117	1008
9312-04-SC-00-15-0	1/30/2007	10:10:00	8.60E+03	1.15E+04		1117	1008
9312-04-BC-00-16-0	1/30/2007	10:11:00	8.52E+03			1117	1008
9312-04-SC-00-16-0	1/30/2007	10:15:00	9.18E+03	1.14E+04		1117	1008

Survey Unit 9312-0004

**Scan Survey Results
Scan Strip Scans**

9312-04-BC-00-17-0	1/30/2007	10:17:00	9.19E+03			1117	1008
9312-04-SC-00-17-0	1/30/2007	10:22:00	9.68E+03	1.20E+04		1117	1008
9312-04-BC-00-18-0	1/30/2007	10:23:00	8.64E+03			1117	1008
9312-04-SC-00-18-0	1/30/2007	10:29:00	8.54E+03	1.15E+04		1117	1008
9312-04-BC-00-19-0	1/30/2007	10:31:00	8.69E+03			1117	1008
9512-04-SC-00-19-0	1/30/2007	10:44:00	1.02E+04	1.15E+04		1117	1008
9312-04-ER-00-19-1	1/30/2007	13:20:00	1.71E+04	1.15E+04	+	1117	1008
9312-04-BC-00-20-0	1/30/2007	10:48:00	9.47E+03			1117	1008
9312-04-SC-00-20-0	1/30/2007	10:49:00	8.86E+03	1.23E+04		1117	1008
9312-04-BC-00-21-0	1/30/2007	10:49:00	9.45E+03			1117	1008
9312-04-SC-00-21-0	1/30/2007	10:50:00	1.01E+04	1.23E+04		1117	1008
9312-04-BC-00-22-0	1/30/2007	10:50:00	1.04E+04			1117	1008
9312-04-SC-00-22-0	1/30/2007	10:51:00	1.00E+04	1.33E+04		1117	1008
9312-04-BC-00-23-0	1/30/2007	10:51:00	1.01E+04			1117	1008
9312-04-SC-00-23-0	1/30/2007	10:53:00	1.12E+04	1.30E+04		1117	1008
9312-04-BC-00-24-0	1/30/2007	10:53:00	1.17E+04			1117	1008
9312-04-SC-00-24-0	1/30/2007	10:54:00	1.15E+04	1.46E+04		1117	1008
9312-04-BC-00-25-0	1/30/2007	10:54:00	1.13E+04			1117	1008
9312-04-SC-00-25-0	1/30/2007	10:55:00	1.25E+04	1.42E+04		1117	1008
9312-04-BC-00-26-0	1/30/2007	10:56:00	1.20E+04			1117	1008
9312-04-SC-00-26-0	1/30/2007	10:57:00	1.13E+04	1.49E+04		1117	1008

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)

General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 180060
SDG: MSR#07-0063**

February 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 February 02, 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>
180060001	9312-0004-001F
180060002	9312-0004-002F
180060003	9312-0004-003F
180060004	9312-0004-004F
180060005	9312-0004-005F
180060006	9312-0004-005FS
180060007	9312-0004-006F
180060008	9312-0004-007F
180060009	9312-0004-008F
180060010	9312-0004-009F
180060011	9312-0004-010F
180060012	9312-0004-011F
180060013	9312-0004-012F
180060014	9312-0004-013F
180060015	9312-0004-014F
180060016	9312-0004-015F
180060017	9312-0004-016-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

Fifteen soil samples were analyzed for FSSGAM and Strontium-90. 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 February 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Chain of Custody and Supporting Documentation

Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424

860-267-2556

Chain of Custody Form

No. 2007-00031

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 & Sr-90	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													180060	
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:													Comment, Preservation	Lab Sample ID
Sample Designation	Date	Time												
9312-0004-001F	1/30/07	1322	TS	G	BP	X								
9312-0004-002F	1/30/07	1325	TS	G	BP	X								
9312-0004-003F	1/30/07	1327	TS	G	BP	X								
9312-0004-004F	1/30/07	1329	TS	G	BP	X								
9312-0004-005F	1/30/07	1332	TS	G	BP	X								
9312-0004-005FS	1/30/07	1332	TS	G	BP	X								
9312-0004-006F	1/30/07	1335	TS	G	BP	X								
9312-0004-007F	1/30/07	1336	TS	G	BP		X							
9312-0004-008F	1/30/07	1337	TS	G	BP	X								
9312-0004-009F	1/30/07	1341	TS	G	BP	X								
9312-0004-010F	1/30/07	1343	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-0063 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: <u>5</u> Deg. C Custody Sealed? Y <u>N</u> Custody Seal Intact? Y N		
1) Relinquished By R GAULT <i>[Signature]</i>			Date/Time 2/1/07 0955			2) Received By K. Wright <i>[Signature]</i>			Date/Time 2/2/07 1145			Bill of Lading #		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

Connecticut Yankee Atomic Power Company

Chain of Custody Form

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

No. 2007-00032

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 & Sr-90	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													180060	
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:													Comment, Preservation	Lab Sample ID
Sample Designation	Date	Time												
9312-0004-011F	1/30/07	1348	TS	G	BP	X								
9312-0004-012F	1/30/07	1349	TS	G	BP		X							
9312-0004-013F	1/30/07	1352	TS	G	BP	X								
9312-0004-014F	1/30/07	1358	TS	G	BP	X								
9312-0004-015F	1/30/07	1400	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-0063 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other			Internal Container Temp.: <u>5</u> Deg. C Custody Sealed? Y <u>N</u> Custody Seal Intact? Y N					
1) Relinquished By R GOWLT <i>[Signature]</i>			Date/Time 2/1/07 0955			2) Received By <i>[Signature]</i>			Date/Time 2/2/07 1145			Bill of Lading #		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

7

Connecticut Yankee Atomic Power Company

Chain of Custody Form

No. 2007-00033

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

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM & Sr-90	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													180060	
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
9312-0004-016-I	1/30/07	1320	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-0063 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: <u>5</u> Deg. C Custody Sealed? <u>Y</u> Custody Seal Intact? <u>N</u>		
1) Relinquished By R GAULT <i>R Gault</i>			Date/Time 2/1/07 0955		2) Received By <i>L. Wright</i>			Date/Time 2/2/07 1145		Bill of Lading #				
3) Relinquished By			Date/Time		4) Received By			Date/Time						
5) Relinquished By			Date/Time		6) Received By			Date/Time						

88

Subject: RE: Samples

From: "Rick E. Gault" <Gault@CYAPCO.com>

Date: Thu, 1 Feb 2007 12:53:59 -0500

To: "Cheryl Jones" <cj@gel.com>

CC: "Clyde Newson" <Newson@CYAPCO.com>, "Jeffrey D. Wagner" <Wagner@CYAPCO.com>, "Dale Randall" <randall@cyapco.com>, "John McCarthy" <McCarthy@CYAPCO.com>, "Arthur L. Hammond" <Hammond@CYAPCO.com>

Yes Cheryl that is acceptable. Thanks for the quick response.

Rick

-----Original Message-----

From: Cheryl Jones [mailto:cj@gel.com]

Sent: Thursday, February 01, 2007 12:40 PM

To: Rick E. Gault

Cc: Clyde Newson; Jeffrey D. Wagner; Dale Randall; John McCarthy; Arthur L. Hammond

Subject: Re: Samples

Rick,

Thank you for forwarding the COCs. Please confirm that it is acceptable for GEL to use the traced/untraced Tc-99 process for these samples, since they are on a 7d TAT request.

Thanks,
Cheryl

Rick E. Gault wrote:

Cheryl;

We're sending 18 samples (17-under MSR 07-0063 and 1-under MSR 07-0065) to GEL. All of the samples have a 7 day TAT request. See attached COCs for requested analyses.

Rick Gault

CYAPCO

860-267-3672

Cheryl A. Jones
Project Manager/PM Team Leader
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC (USA) 29407
Direct: 843.769.7388
Main: 843.556.8171 x 4243
Fax: 843.766.1178
E-mail: cj@gel.com
Web: www.gel.com

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Figure 1. Sample Check-in List

Date/Time Received: 2/2/07 11:45
SDG#: MSR#07-0063, MSR#07-0065
Work Order Number: 180060, 180036
Shipping Container ID: 70082975958 Chain of Custody #: 2007-00031/32/33/30

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 5°C
5. Vermiculite/packing materials is: Wet Dry NA
6. Number of samples in shipping container: 18
7. Sample holding times exceeded? Yes No

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

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

Sample Custodian/Laboratory: K. H. Feight Date: 2/2/07 11:45
Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Yank</u>	SDG/ARCO/Work Order: <u>180036, 180060</u>
Date Received: <u>2/2/07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

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

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#:
D Regulated as a Foreign Soil?	/			

PM (or PMA) review of Hazard classification: 12 Initials ATK Date: 2/2/07

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 180060**

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: 607169
Prep Batch Number: 607082
Dry Soil Prep GL-RAD-A-021 Batch Number: 607077

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272522	Method Blank (MB)
1201272523	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272524	180060008(9312-0004-007F) Matrix Spike (MS)
1201272525	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The sample and the duplicate, 1201272523 (9312-0004-007F) and 180060008 (9312-0004-007F), did not meet the relative percent difference requirement for CM-243/244, however they do meet the relative error ratio requirement with a value of 1.07.

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: 607170
Prep Batch Number: 607082
Dry Soil Prep GL-RAD-A-021 Batch Number: 607077

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272526	Method Blank (MB)
1201272527	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272528	180060008(9312-0004-007F) Matrix Spike (MS)
1201272529	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

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:	607171
Prep Batch Number:	607082
Dry Soil Prep GL-RAD-A-021 Batch Number:	607077

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272530	Method Blank (MB)
1201272531	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272532	180060008(9312-0004-007F) Matrix Spike (MS)
1201272533	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were recounted due to quench numbers being outside of 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.

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: 607292
Prep Batch Number: 607077

Sample ID	Client ID
180060001	9312-0004-001F
180060002	9312-0004-002F
180060003	9312-0004-003F
180060004	9312-0004-004F
180060005	9312-0004-005F
180060006	9312-0004-005FS
180060007	9312-0004-006F
180060008	9312-0004-007F
180060009	9312-0004-008F
180060010	9312-0004-009F
180060011	9312-0004-010F
180060012	9312-0004-011F
180060013	9312-0004-012F
180060014	9312-0004-013F
180060015	9312-0004-014F
180060016	9312-0004-015F
180060017	9312-0004-016-I
1201272698	Method Blank (MB)
1201272699	180060001(9312-0004-001F) Sample Duplicate (DUP)
1201272700	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 13.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 180060001 (9312-0004-001F).

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

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high counting uncertainty.	Thallium-208	1201272698
UI	Data rejected due to high peak-width.	Cobalt-60	180060015
UI	Data rejected due to interference.	Manganese-54	1201272699
UI	Data rejected due to low abundance.	Actinium-228	180060008
		Bismuth-212	180060008
		Cesium-134	180060001
			180060004
			180060007
			180060009
			180060010
			180060011
			180060013
			180060014
			180060015
			180060016
			180060017
			1201272699
		Europium-154	180060010
			180060011
		Lead-214	1201272698

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:	608308
Prep Batch Number:	607082
Dry Soil Prep GL-RAD-A-021 Batch Number:	607077

Sample ID	Client ID
180060001	9312-0004-001F
180060002	9312-0004-002F
180060003	9312-0004-003F
180060004	9312-0004-004F
180060005	9312-0004-005F
180060006	9312-0004-005FS
180060007	9312-0004-006F
180060008	9312-0004-007F
180060009	9312-0004-008F
180060010	9312-0004-009F
180060011	9312-0004-010F
180060012	9312-0004-011F
180060013	9312-0004-012F
180060014	9312-0004-013F
180060015	9312-0004-014F
180060016	9312-0004-015F
180060017	9312-0004-016-I
1201275063	Method Blank (MB)
1201275064	180060001(9312-0004-001F) Sample Duplicate (DUP)
1201275065	180060001(9312-0004-001F) Matrix Spike (MS)
1201275066	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180060001 (9312-0004-001F).

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 180060015 (9312-0004-014F) and 180060017 (9312-0004-016-I) were recounted due to high MDAs. Samples 1201275065 (9312-0004-001F) and 1201275066 (LCS) were recounted due to low/high recovery. Samples were reprepared due to low lcs recovery and high relative percent difference. There was also alpha interference in the samples that may have biased the results. The samples could not be cleaned up due to low carrier net weights.

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. The following NCR was generated for this SDG: NCR 405548 was generated due to RDL less than MDA and Failed Recovery for MS/PS. 1. Matrix spike 1201275065 did not meet the recovery requirement due to the analyst error. The analyst did not spike the sample. The batch is a reprep. 2. The matrix spike did not meet the required detection limit due to the sample not being spiked. 1. The matrix spike passed on the initial batch, but there was alpha interference that elevated the activities. The second prep does not show any interference. Project manager notified. Reporting results. 2. Reporting results

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: 607151

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272496	Method Blank (MB)
1201272497	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272498	180060008(9312-0004-007F) Matrix Spike (MS)
1201272499	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Fe55, Solid-ALL FSS
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	607148
Prep Batch Number:	607082
Dry Soil Prep GL-RAD-A-021 Batch Number:	607077

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272488	Method Blank (MB)
1201272489	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272490	180060008(9312-0004-007F) Matrix Spike (MS)
1201272491	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint Ni63, Solid-ALL FSS
Analytical Method: DOE RESL Ni-1, Modified
Prep Method: Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep
Analytical Batch Number: 607147
Prep Batch Number: 607082
Dry Soil Prep GL-RAD-A-021 Batch Number: 607077

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272484	Method Blank (MB)
1201272485	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272486	180060008(9312-0004-007F) Matrix Spike (MS)
1201272487	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: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: LSC, Tritium Dist, Solid - 3 pCi/g

Analytical Method: EPA 906.0 Modified

Analytical Batch Number: 607149

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272492	Method Blank (MB)
1201272493	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272494	180060008(9312-0004-007F) Matrix Spike (MS)
1201272495	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint C14, Solid All,FSS

Analytical Method: EPA EERF C-01 Modified

Analytical Batch Number: 607153

Sample ID	Client ID
180060008	9312-0004-007F
180060013	9312-0004-012F
1201272504	Method Blank (MB)
1201272505	180060008(9312-0004-007F) Sample Duplicate (DUP)
1201272506	180060008(9312-0004-007F) Matrix Spike (MS)
1201272507	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180060008 (9312-0004-007F).

QC Information

All of the QC samples met the required acceptance limits.

COMPANY - WIDE NONCONFORMANCE REPORT

Mo.Day Yr. 09-FEB-07	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GFPC	Test / Method: EPA 905.0 Modified	Matrix Type: Solid	Client Code: YANK
Batch ID: 608308	Sample Numbers: See Below		

Potentially affected work order(s)(SDG): 180060(MSR#07-0063)

Application Issues:

RDL less than MDA
 Failed Recovery for MS/PS

**Specification and Requirements
 Nonconformance Description:**

1. Matrix spike 1201275065 did not meet the recovery requirement due to the analyst error. The analyst did not spike the sample. The batch is a reprep.
2. The matrix spike did not meet the required detection limit due to the sample not being spiked.

NRG Disposition:

1. The matrix spike passed on the initial batch, but there was alpha interference that elevated the activities. The second prep does not show any interference. Project manager notified. Reporting results.
2. Reporting results

Originator's Name:

Kenshalla Oston 09-FEB-07

Data Validator/Group Leader:

Heather Anderson 09-FEB-07

Quality Review:

Director:

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#07-0063 GEL Work Order: 180060

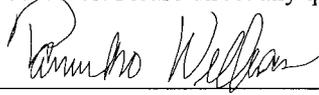
The Qualifiers in this report are defined as follows:

- * 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: February 9, 2007

Client Sample ID:	9312-0004-001F	Project:	YANK01204
Sample ID:	180060001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	30-JAN-07		
Receive Date:	02-FEB-07		
Collector:	Client		
Moisture:	6.99%		

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

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

Actinium-228		0.841	+/-0.177	0.0615	+/-0.177	0.123	pCi/g		MJH1	02/05/07	1456	607292
Americium-241	U	-0.0108	+/-0.110	0.0906	+/-0.110	0.181	pCi/g					
Bismuth-212		0.741	+/-0.302	0.143	+/-0.302	0.286	pCi/g					
Bismuth-214		0.786	+/-0.116	0.0325	+/-0.116	0.065	pCi/g					
Cesium-134	UI	0.00	+/-0.0336	0.0247	+/-0.0336	0.0494	pCi/g					
Cesium-137		0.0493	+/-0.039	0.0215	+/-0.039	0.043	pCi/g					
Cobalt-60	U	0.0103	+/-0.0263	0.0229	+/-0.0263	0.0457	pCi/g					
Europium-152	U	0.0522	+/-0.0891	0.0506	+/-0.0891	0.101	pCi/g					
Europium-154	U	-0.048	+/-0.0877	0.0586	+/-0.0877	0.117	pCi/g					
Europium-155	U	0.0559	+/-0.0796	0.0609	+/-0.0796	0.122	pCi/g					
Lead-212		0.830	+/-0.0875	0.029	+/-0.0875	0.0579	pCi/g					
Lead-214		0.942	+/-0.126	0.0343	+/-0.126	0.0686	pCi/g					
Manganese-54	U	0.0118	+/-0.0223	0.0202	+/-0.0223	0.0403	pCi/g					
Niobium-94	U	0.00166	+/-0.0212	0.0181	+/-0.0212	0.0361	pCi/g					
Potassium-40		13.9	+/-1.28	0.137	+/-1.28	0.274	pCi/g					
Radium-226		0.786	+/-0.116	0.0325	+/-0.116	0.065	pCi/g					
Silver-108m	U	-0.00159	+/-0.019	0.0167	+/-0.019	0.0334	pCi/g					
Thallium-208		0.240	+/-0.0524	0.0195	+/-0.0524	0.0389	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.026	+/-0.0226	0.0157	+/-0.0226	0.0362	pCi/g		KSD1	02/09/07	0948	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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: February 9, 2007

Client Sample ID: 9312-0004-001F
Sample ID: 180060001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			66		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			66		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

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

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: February 9, 2007

Client Sample ID: 9312-0004-002F
Sample ID: 180060002
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 12.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.13	+/-0.226	0.0688	+/-0.226	0.137	pCi/g		MJH1	02/05/07	1456	607292
Americium-241	U	0.0442	+/-0.0818	0.0681	+/-0.0818	0.136	pCi/g					
Bismuth-212		0.783	+/-0.316	0.143	+/-0.316	0.285	pCi/g					
Bismuth-214		1.05	+/-0.139	0.0369	+/-0.139	0.0737	pCi/g					
Cesium-134	U	0.0295	+/-0.0248	0.0232	+/-0.0248	0.0464	pCi/g					
Cesium-137		0.0871	+/-0.0332	0.0192	+/-0.0332	0.0385	pCi/g					
Cobalt-60	U	-3.140E-05	+/-0.0245	0.0205	+/-0.0245	0.041	pCi/g					
Europium-152	U	0.00745	+/-0.073	0.0499	+/-0.073	0.0998	pCi/g					
Europium-154	U	-0.0472	+/-0.0851	0.0562	+/-0.0851	0.112	pCi/g					
Europium-155	U	0.0363	+/-0.062	0.0569	+/-0.062	0.114	pCi/g					
Lead-212		1.00	+/-0.103	0.0295	+/-0.103	0.0589	pCi/g					
Lead-214		1.18	+/-0.141	0.0363	+/-0.141	0.0725	pCi/g					
Manganese-54	U	0.0156	+/-0.0239	0.0216	+/-0.0239	0.0433	pCi/g					
Niobium-94	U	0.0169	+/-0.0209	0.0186	+/-0.0209	0.0371	pCi/g					
Potassium-40		15.8	+/-1.31	0.185	+/-1.31	0.371	pCi/g					
Radium-226		1.05	+/-0.139	0.0369	+/-0.139	0.0737	pCi/g					
Silver-108m	U	0.0103	+/-0.0197	0.0178	+/-0.0197	0.0355	pCi/g					
Thallium-208		0.289	+/-0.0525	0.0187	+/-0.0525	0.0374	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		0.0595	+/-0.0317	0.0196	+/-0.0317	0.0453	pCi/g		KSD1	02/09/07	0948	608308

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-002F
Sample ID: 180060002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			59		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			59		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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: February 9, 2007

Client Sample ID: 9312-0004-003F
Sample ID: 180060003
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 8.32%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.783	+/-0.163	0.0616	+/-0.163	0.123	pCi/g		MJH1	02/05/07	1457	607292
Americium-241	U	0.0546	+/-0.0697	0.0585	+/-0.0697	0.117	pCi/g					
Bismuth-212		0.533	+/-0.239	0.119	+/-0.239	0.237	pCi/g					
Bismuth-214		0.548	+/-0.0869	0.0322	+/-0.0869	0.0645	pCi/g					
Cesium-134	U	0.0381	+/-0.0364	0.0216	+/-0.0364	0.0432	pCi/g					
Cesium-137		0.155	+/-0.0392	0.0195	+/-0.0392	0.039	pCi/g					
Cobalt-60	U	0.0269	+/-0.0239	0.0222	+/-0.0239	0.0443	pCi/g					
Europium-152	U	-0.00239	+/-0.0617	0.0447	+/-0.0617	0.0894	pCi/g					
Europium-154	U	-0.0149	+/-0.0649	0.0535	+/-0.0649	0.107	pCi/g					
Europium-155	U	0.0349	+/-0.0565	0.0503	+/-0.0565	0.101	pCi/g					
Lead-212		0.689	+/-0.076	0.0261	+/-0.076	0.0521	pCi/g					
Lead-214		0.653	+/-0.0967	0.0311	+/-0.0967	0.0622	pCi/g					
Manganese-54	U	-0.00213	+/-0.0187	0.0161	+/-0.0187	0.0323	pCi/g					
Niobium-94	U	0.00746	+/-0.0169	0.0154	+/-0.0169	0.0307	pCi/g					
Potassium-40		11.8	+/-1.08	0.166	+/-1.08	0.332	pCi/g					
Radium-226		0.548	+/-0.0869	0.0322	+/-0.0869	0.0645	pCi/g					
Silver-108m	U	0.00264	+/-0.0181	0.016	+/-0.0181	0.032	pCi/g					
Thallium-208		0.226	+/-0.0412	0.0155	+/-0.0412	0.0309	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.0338	+/-0.0249	0.017	+/-0.025	0.0389	pCi/g		KSD1	02/09/07	0948	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-003F
Sample ID: 180060003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			68		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			68		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** 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: February 9, 2007

Client Sample ID: 9312-0004-004F
Sample ID: 180060004
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 10.9%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.762	+/-0.184	0.0755	+/-0.184	0.151	pCi/g		MJH1	02/05/07	1457	607292
Americium-241	U	0.0193	+/-0.0419	0.0361	+/-0.0419	0.0722	pCi/g					
Bismuth-212		0.623	+/-0.371	0.157	+/-0.371	0.314	pCi/g					
Bismuth-214		0.621	+/-0.115	0.0376	+/-0.115	0.0751	pCi/g					
Cesium-134	UI	0.00	+/-0.0303	0.0258	+/-0.0303	0.0516	pCi/g					
Cesium-137		0.109	+/-0.040	0.0236	+/-0.040	0.0471	pCi/g					
Cobalt-60	U	0.0148	+/-0.0458	0.0274	+/-0.0458	0.0549	pCi/g					
Europium-152	U	-0.00201	+/-0.0771	0.0531	+/-0.0771	0.106	pCi/g					
Europium-154	U	-0.0991	+/-0.0912	0.0674	+/-0.0912	0.135	pCi/g					
Europium-155	U	0.0488	+/-0.0793	0.0543	+/-0.0793	0.109	pCi/g					
Lead-212		0.812	+/-0.106	0.0339	+/-0.106	0.0677	pCi/g					
Lead-214		0.819	+/-0.118	0.0429	+/-0.118	0.0858	pCi/g					
Manganese-54	U	0.0009	+/-0.0242	0.0214	+/-0.0242	0.0429	pCi/g					
Niobium-94	U	-0.00037	+/-0.0279	0.0205	+/-0.0279	0.041	pCi/g					
Potassium-40		13.7	+/-1.40	0.224	+/-1.40	0.448	pCi/g					
Radium-226		0.621	+/-0.115	0.0376	+/-0.115	0.0751	pCi/g					
Silver-108m	U	-0.000884	+/-0.0217	0.0193	+/-0.0217	0.0385	pCi/g					
Thallium-208		0.282	+/-0.056	0.0206	+/-0.056	0.0413	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90		0.0597	+/-0.0298	0.0181	+/-0.0298	0.0417	pCi/g		KSD1	02/09/07	0948	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-004F
Sample ID: 180060004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium-90		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** 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: February 9, 2007

Client Sample ID: 9312-0004-005F
Sample ID: 180060005
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 6.44%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.732	+/-0.162	0.0581	+/-0.162	0.116	pCi/g		MJH1	02/05/07	1458	607292
Americium-241	U	0.0597	+/-0.0744	0.0632	+/-0.0744	0.126	pCi/g					
Bismuth-212		0.513	+/-0.253	0.127	+/-0.253	0.253	pCi/g					
Bismuth-214		0.643	+/-0.100	0.0317	+/-0.100	0.0634	pCi/g					
Cesium-134	U	0.0426	+/-0.0375	0.0245	+/-0.0375	0.0489	pCi/g					
Cesium-137		0.604	+/-0.0726	0.0184	+/-0.0726	0.0367	pCi/g					
Cobalt-60		0.0947	+/-0.034	0.015	+/-0.034	0.0299	pCi/g					
Europium-152	U	0.0145	+/-0.066	0.0492	+/-0.066	0.0984	pCi/g					
Europium-154	U	-0.0191	+/-0.0571	0.0462	+/-0.0571	0.0923	pCi/g					
Europium-155	U	0.0315	+/-0.0607	0.0542	+/-0.0607	0.108	pCi/g					
Lead-212		0.738	+/-0.0782	0.0273	+/-0.0782	0.0546	pCi/g					
Lead-214		0.715	+/-0.103	0.0335	+/-0.103	0.067	pCi/g					
Manganese-54	U	-0.00403	+/-0.019	0.0164	+/-0.019	0.0327	pCi/g					
Niobium-94	U	0.0165	+/-0.0186	0.0167	+/-0.0186	0.0335	pCi/g					
Potassium-40		11.6	+/-1.03	0.143	+/-1.03	0.286	pCi/g					
Radium-226		0.643	+/-0.100	0.0317	+/-0.100	0.0634	pCi/g					
Silver-108m	U	-0.00696	+/-0.0179	0.0154	+/-0.0179	0.0307	pCi/g					
Thallium-208		0.261	+/-0.0473	0.0149	+/-0.0473	0.0299	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.0299	+/-0.0236	0.0159	+/-0.0236	0.0369	pCi/g		KSD1	02/09/07	0948	608308

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-005F
Sample ID: 180060005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits					
Strontium-90		GFPC, Sr90, solid-ALL FSS			67		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			67		(25%-125%)					

Notes:

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-005FS
Sample ID: 180060006
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 6.59%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch #
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.855	+/-0.183	0.061	+/-0.183	0.122	pCi/g		MJH1	02/05/07	1458	607292
Americium-241	U	-0.0956	+/-0.086	0.073	+/-0.086	0.146	pCi/g					
Bismuth-212		0.660	+/-0.300	0.134	+/-0.300	0.268	pCi/g					
Bismuth-214		0.577	+/-0.101	0.036	+/-0.101	0.0719	pCi/g					
Cesium-134	U	0.0314	+/-0.0233	0.0216	+/-0.0233	0.0432	pCi/g					
Cesium-137		0.741	+/-0.0785	0.0178	+/-0.0785	0.0355	pCi/g					
Cobalt-60		0.0853	+/-0.0497	0.0178	+/-0.0497	0.0356	pCi/g					
Europium-152	U	-0.0089	+/-0.0782	0.0523	+/-0.0782	0.105	pCi/g					
Europium-154	U	-0.0234	+/-0.0633	0.0515	+/-0.0633	0.103	pCi/g					
Europium-155	U	0.064	+/-0.0625	0.0579	+/-0.0625	0.116	pCi/g					
Lead-212		0.694	+/-0.0806	0.0273	+/-0.0806	0.0545	pCi/g					
Lead-214		0.641	+/-0.113	0.0358	+/-0.113	0.0715	pCi/g					
Manganese-54	U	0.00907	+/-0.0208	0.0188	+/-0.0208	0.0376	pCi/g					
Niobium-94	U	0.000806	+/-0.0197	0.0168	+/-0.0197	0.0335	pCi/g					
Potassium-40		10.2	+/-0.996	0.131	+/-0.996	0.262	pCi/g					
Radium-226		0.577	+/-0.101	0.036	+/-0.101	0.0719	pCi/g					
Silver-108m	U	-0.0158	+/-0.0213	0.0179	+/-0.0213	0.0358	pCi/g					
Thallium-208		0.218	+/-0.0423	0.0165	+/-0.0423	0.033	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		0.0604	+/-0.0282	0.0165	+/-0.0283	0.0383	pCi/g		KSD1	02/09/07	0947	608308

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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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: February 9, 2007

Client Sample ID: 9312-0004-005FS
Sample ID: 180060006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium-90		GFPC, Sr90, solid-ALL FSS			70		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			70		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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: February 9, 2007

Client Sample ID: 9312-0004-006F
Sample ID: 180060007
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 7.72%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.847	+/-0.180	0.0617	+/-0.180	0.123	pCi/g					
Americium-241	U	0.0506	+/-0.0687	0.0579	+/-0.0687	0.116	pCi/g		MJH1	02/05/07	1459	607292
Bismuth-212		0.613	+/-0.281	0.166	+/-0.281	0.332	pCi/g					
Bismuth-214		0.540	+/-0.0921	0.0363	+/-0.0921	0.0726	pCi/g					
Cesium-134	UI	0.00	+/-0.0377	0.0251	+/-0.0377	0.0501	pCi/g					
Cesium-137		0.110	+/-0.0357	0.0187	+/-0.0357	0.0375	pCi/g					
Cobalt-60	U	0.0361	+/-0.0238	0.0228	+/-0.0238	0.0456	pCi/g					
Europium-152	U	0.0161	+/-0.0658	0.0518	+/-0.0658	0.104	pCi/g					
Europium-154	U	-0.0102	+/-0.0788	0.0581	+/-0.0788	0.116	pCi/g					
Europium-155	U	0.033	+/-0.0605	0.0557	+/-0.0605	0.111	pCi/g					
Lead-212		0.754	+/-0.0818	0.0295	+/-0.0818	0.0589	pCi/g					
Lead-214		0.701	+/-0.104	0.0369	+/-0.104	0.0737	pCi/g					
Manganese-54	U	0.035	+/-0.0197	0.0184	+/-0.0197	0.0368	pCi/g					
Niobium-94	U	0.0154	+/-0.0203	0.018	+/-0.0203	0.0361	pCi/g					
Potassium-40		12.6	+/-1.13	0.148	+/-1.13	0.295	pCi/g					
Radium-226		0.540	+/-0.0921	0.0363	+/-0.0921	0.0726	pCi/g					
Silver-108m	U	0.00968	+/-0.0329	0.0178	+/-0.0329	0.0355	pCi/g					
Thallium-208		0.203	+/-0.0448	0.018	+/-0.0448	0.036	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.00771	+/-0.0215	0.017	+/-0.0215	0.0391	pCi/g		KSD1	02/09/07	0947	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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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: February 9, 2007

Client Sample ID: 9312-0004-006F
Sample ID: 180060007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits					
Strontium-90		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)					

Notes:

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 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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: February 9, 2007

Client Sample ID: 9312-0004-007F
Sample ID: 180060008
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 7.28%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0678	+/-0.0899	0.00	+/-0.0903	0.084	pCi/g		MXA	02/05/07	1044	607169	
													1
Curium-242	U	0.00	+/-0.0624	0.00	+/-0.0624	0.0863	pCi/g						
Curium-243/244		0.093	+/-0.105	0.00	+/-0.106	0.084	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0187	+/-0.0497	0.0221	+/-0.0497	0.111	pCi/g		MXA	02/05/07	1044	607170	
													1
Plutonium-239/240	U	-0.00493	+/-0.0548	0.0495	+/-0.0548	0.166	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-1.15	+/-5.42	4.62	+/-5.42	9.81	pCi/g		MXA	02/06/07	1528	607171	
													1
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228	UI	0.00	+/-0.191	0.161	+/-0.191	0.323	pCi/g		MJH1	02/05/07	1459	607292	
Americium-241	U	0.015	+/-0.0415	0.0341	+/-0.0415	0.0682	pCi/g						
Bismuth-212	UI	0.00	+/-0.369	0.255	+/-0.369	0.509	pCi/g						
Bismuth-214		0.413	+/-0.116	0.0481	+/-0.116	0.096	pCi/g						
Cesium-134	U	0.0609	+/-0.052	0.0335	+/-0.052	0.0669	pCi/g						
Cesium-137	U	0.0342	+/-0.0315	0.0305	+/-0.0315	0.061	pCi/g						
Cobalt-60	U	0.0316	+/-0.0397	0.037	+/-0.0397	0.074	pCi/g						
Europium-152	U	-0.0353	+/-0.0805	0.0549	+/-0.0805	0.110	pCi/g						
Europium-154	U	-0.0219	+/-0.106	0.0862	+/-0.106	0.172	pCi/g						
Europium-155	U	0.0254	+/-0.0599	0.0548	+/-0.0599	0.109	pCi/g						
Lead-212		0.538	+/-0.0801	0.0316	+/-0.0801	0.0632	pCi/g						
Lead-214		0.508	+/-0.102	0.0423	+/-0.102	0.0846	pCi/g						
Manganese-54	U	0.0234	+/-0.0192	0.0244	+/-0.0192	0.0488	pCi/g						
Niobium-94	U	0.00138	+/-0.0276	0.0244	+/-0.0276	0.0488	pCi/g						
Potassium-40		9.40	+/-1.13	0.234	+/-1.13	0.467	pCi/g						
Radium-226		0.413	+/-0.116	0.0481	+/-0.116	0.096	pCi/g						
Silver-108m	U	0.0108	+/-0.0244	0.0221	+/-0.0244	0.0441	pCi/g						
Thallium-208		0.179	+/-0.0576	0.0271	+/-0.0576	0.0541	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0157	+/-0.0237	0.0179	+/-0.0237	0.0411	pCi/g		KSD1	02/09/07	0947	608308	
Rad Liquid Scintillation Analysis													

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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: February 9, 2007

Client Sample ID: 9312-0004-007F
Sample ID: 180060008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>LSC, Tritium Dist, Solid – 3 pCi/g</i>												
Tritium	U	0.792	+/-1.08	0.868	+/-1.08	1.82	pCi/g		AXD2	02/03/07	0322	607149
<i>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	0.00632	+/-0.0894	0.0749	+/-0.0894	0.153	pCi/g		AXD2	02/03/07	0201	607153
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	-25.7	+/-46.1	31.2	+/-46.1	64.7	pCi/g		MXP1	02/06/07	1559	607148
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	-0.51	+/-8.56	7.21	+/-8.56	15.1	pCi/g		MXP1	02/06/07	1401	607147
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99	U	0.142	+/-0.183	0.150	+/-0.183	0.309	pCi/g		MXP1	02/07/07	1402	607151

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

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 905.0 Modified
7	EPA 906.0 Modified
8	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	81	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	95	(15%-125%)
Plutonium-242	Liquid Scint Pu241, Solid-ALL FS	99	(25%-125%)
Strontium-90	GFPC, Sr90, solid-ALL FSS	66	(25%-125%)

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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: February 9, 2007

Client Sample ID: 9312-0004-007F
Sample ID: 180060008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	M	
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			66		(25%-125%)						
Iron-59		Liquid Scint Fe55, Solid-ALL FS			73		(15%-125%)						
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			89		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			89		(25%-125%)						
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			82		(15%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			82		(15%-125%)						

Notes:

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 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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: February 9, 2007

Client Sample ID: 9312-0004-008F
Sample ID: 180060009
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 6.45%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.826	+/-0.169	0.0481	+/-0.169	0.0962	pCi/g		MJH1	02/05/07	1500	607292
Americium-241	U	0.0252	+/-0.0729	0.0609	+/-0.0729	0.122	pCi/g					
Bismuth-212		0.481	+/-0.230	0.0973	+/-0.230	0.195	pCi/g					
Bismuth-214		0.616	+/-0.0906	0.0258	+/-0.0906	0.0515	pCi/g					
Cesium-134	UI	0.00	+/-0.0227	0.0179	+/-0.0227	0.0357	pCi/g					
Cesium-137		0.199	+/-0.0352	0.013	+/-0.0352	0.026	pCi/g					
Cobalt-60	U	0.0126	+/-0.017	0.0152	+/-0.017	0.0303	pCi/g					
Europium-152	U	-0.0219	+/-0.0756	0.038	+/-0.0756	0.076	pCi/g					
Europium-154	U	-0.0131	+/-0.0469	0.0375	+/-0.0469	0.0749	pCi/g					
Europium-155	U	0.031	+/-0.0752	0.0525	+/-0.0752	0.105	pCi/g					
Lead-212		0.775	+/-0.0771	0.0233	+/-0.0771	0.0466	pCi/g					
Lead-214		0.713	+/-0.0947	0.0266	+/-0.0947	0.0531	pCi/g					
Manganese-54	U	0.000242	+/-0.0159	0.0139	+/-0.0159	0.0278	pCi/g					
Niobium-94	U	-0.00457	+/-0.0148	0.0123	+/-0.0148	0.0246	pCi/g					
Potassium-40		12.0	+/-0.969	0.125	+/-0.969	0.250	pCi/g					
Radium-226		0.616	+/-0.0906	0.0258	+/-0.0906	0.0515	pCi/g					
Silver-108m	U	-0.00705	+/-0.0151	0.013	+/-0.0151	0.0259	pCi/g					
Thallium-208		0.202	+/-0.0407	0.0135	+/-0.0407	0.0269	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.031	+/-0.0245	0.0167	+/-0.0245	0.0386	pCi/g		KSD1	02/09/07	0947	608308

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-008F
Sample ID: 180060009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium-90		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)						

Notes:

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 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - ND Analyte concentration is not detected above the detection limit
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 - 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: February 9, 2007

Client Sample ID: 9312-0004-009F
Sample ID: 180060010
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 6.27%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.861	+/-0.281	0.102	+/-0.281	0.203	pCi/g		MJH1	02/05/07	1614	607292
Americium-241	U	-0.00635	+/-0.0548	0.0455	+/-0.0548	0.0909	pCi/g					
Bismuth-212		0.871	+/-0.406	0.225	+/-0.406	0.450	pCi/g					
Bismuth-214		0.629	+/-0.140	0.0556	+/-0.140	0.111	pCi/g					
Cesium-134	UI	0.00	+/-0.0617	0.0375	+/-0.0617	0.0749	pCi/g					
Cesium-137	U	0.0487	+/-0.0508	0.0297	+/-0.0508	0.0594	pCi/g					
Cobalt-60	U	0.0324	+/-0.0341	0.0308	+/-0.0341	0.0615	pCi/g					
Europium-152	U	-0.0769	+/-0.101	0.0743	+/-0.101	0.149	pCi/g					
Europium-154	UI	0.00	+/-0.135	0.0948	+/-0.135	0.190	pCi/g					
Europium-155	U	0.00827	+/-0.080	0.0738	+/-0.080	0.148	pCi/g					
Lead-212		0.746	+/-0.103	0.0409	+/-0.103	0.0817	pCi/g					
Lead-214		0.473	+/-0.126	0.0551	+/-0.126	0.110	pCi/g					
Manganese-54	U	0.00242	+/-0.0338	0.0298	+/-0.0338	0.0595	pCi/g					
Niobium-94	U	-0.00921	+/-0.032	0.0266	+/-0.032	0.0532	pCi/g					
Potassium-40		11.8	+/-1.33	0.246	+/-1.33	0.492	pCi/g					
Radium-226		0.629	+/-0.140	0.0556	+/-0.140	0.111	pCi/g					
Silver-108m	U	-0.00257	+/-0.0298	0.0263	+/-0.0298	0.0525	pCi/g					
Thallium-208		0.236	+/-0.0637	0.0302	+/-0.0637	0.0604	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		0.0624	+/-0.0306	0.019	+/-0.0306	0.0433	pCi/g		KSD1	02/09/07	0947	608308

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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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: February 9, 2007

Client Sample ID: 9312-0004-009F
Sample ID: 180060010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			60		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			60		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** 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: February 9, 2007

Client Sample ID:	9312-0004-010F	Project:	YANK01204
Sample ID:	180060011	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	30-JAN-07		
Receive Date:	02-FEB-07		
Collector:	Client		
Moisture:	7.37%		

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

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

Actinium-228		0.876	+/-0.223	0.0804	+/-0.223	0.161	pCi/g		MJH1	02/05/07	1722	607292
Americium-241	U	0.0304	+/-0.0432	0.0364	+/-0.0432	0.0728	pCi/g					
Bismuth-212	U	0.343	+/-0.503	0.195	+/-0.503	0.390	pCi/g					
Bismuth-214		0.577	+/-0.114	0.0416	+/-0.114	0.0831	pCi/g					
Cesium-134	UI	0.00	+/-0.0452	0.0331	+/-0.0452	0.0661	pCi/g					
Cesium-137	U	-0.00784	+/-0.0309	0.0256	+/-0.0309	0.0512	pCi/g					
Cobalt-60	U	-0.0123	+/-0.0317	0.0252	+/-0.0317	0.0503	pCi/g					
Europium-152	U	0.013	+/-0.0944	0.0587	+/-0.0944	0.117	pCi/g					
Europium-154	UI	0.00	+/-0.114	0.0695	+/-0.114	0.139	pCi/g					
Europium-155	U	0.117	+/-0.113	0.0615	+/-0.113	0.123	pCi/g					
Lead-212		0.929	+/-0.120	0.034	+/-0.120	0.0679	pCi/g					
Lead-214		0.647	+/-0.122	0.0417	+/-0.122	0.0833	pCi/g					
Manganese-54	U	0.0208	+/-0.0284	0.0262	+/-0.0284	0.0524	pCi/g					
Niobium-94	U	-0.0162	+/-0.0264	0.0209	+/-0.0264	0.0418	pCi/g					
Potassium-40		13.6	+/-1.47	0.164	+/-1.47	0.327	pCi/g					
Radium-226		0.577	+/-0.114	0.0416	+/-0.114	0.0831	pCi/g					
Silver-108m	U	0.00891	+/-0.0243	0.0218	+/-0.0243	0.0435	pCi/g					
Thallium-208		0.377	+/-0.0627	0.0199	+/-0.0627	0.0398	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90		0.0589	+/-0.0265	0.0157	+/-0.0266	0.0361	pCi/g		KSD1	02/09/07	0947	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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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: February 9, 2007

Client Sample ID: 9312-0004-010F
Sample ID: 180060011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			68		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			68		(25%-125%)				

Notes:

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 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
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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: February 9, 2007

Client Sample ID: 9312-0004-011F
Sample ID: 180060012
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 6.62%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.609	+/-0.264	0.0991	+/-0.264	0.198	pCi/g		MJH1	02/05/07	1723	607292
Americium-241	U	0.0257	+/-0.0473	0.0393	+/-0.0473	0.0786	pCi/g					
Bismuth-212		0.553	+/-0.357	0.204	+/-0.357	0.408	pCi/g					
Bismuth-214		0.588	+/-0.132	0.0485	+/-0.132	0.0969	pCi/g					
Cesium-134	U	0.0362	+/-0.0494	0.0365	+/-0.0494	0.073	pCi/g					
Cesium-137	U	0.00211	+/-0.0342	0.0305	+/-0.0342	0.061	pCi/g					
Cobalt-60	U	-0.00859	+/-0.0433	0.0296	+/-0.0433	0.0591	pCi/g					
Europium-152	U	-0.0213	+/-0.0925	0.0602	+/-0.0925	0.120	pCi/g					
Europium-154	U	-0.0254	+/-0.126	0.103	+/-0.126	0.206	pCi/g					
Europium-155	U	0.0724	+/-0.0656	0.0611	+/-0.0656	0.122	pCi/g					
Lead-212		0.719	+/-0.0946	0.0292	+/-0.0946	0.0584	pCi/g					
Lead-214		0.678	+/-0.129	0.0441	+/-0.129	0.0882	pCi/g					
Manganese-54	U	0.00377	+/-0.0307	0.0271	+/-0.0307	0.0542	pCi/g					
Niobium-94	U	0.00336	+/-0.0288	0.0257	+/-0.0288	0.0514	pCi/g					
Potassium-40		11.6	+/-1.19	0.176	+/-1.19	0.352	pCi/g					
Radium-226		0.588	+/-0.132	0.0485	+/-0.132	0.0969	pCi/g					
Silver-108m	U	-0.00283	+/-0.0263	0.0228	+/-0.0263	0.0456	pCi/g					
Thallium-208		0.253	+/-0.0584	0.0245	+/-0.0584	0.049	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90		0.0631	+/-0.0269	0.0152	+/-0.0269	0.0353	pCi/g		KSD1	02/09/07	0947	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: February 9, 2007

Client Sample ID: 9312-0004-011F
Sample ID: 180060012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits					
Strontium-90		GFPC, Sr90, solid-ALL FSS			68		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			68		(25%-125%)					

Notes:

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 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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: February 9, 2007

Client Sample ID: 9312-0004-012F
Sample ID: 180060013
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 6.36%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Notes
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0251	+/-0.0551	0.00	+/-0.0552	0.0762	pCi/g		MXA	02/05/07	1044	607169	1
Curium-242	U	0.00	+/-0.0566	0.00	+/-0.0566	0.0783	pCi/g						
Curium-243/244	U	0.0562	+/-0.0779	0.00	+/-0.0783	0.0762	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0339	+/-0.0765	0.0412	+/-0.0766	0.154	pCi/g		MXA	02/05/07	1044	607170	1
Plutonium-239/240	U	-0.00635	+/-0.0534	0.0238	+/-0.0534	0.119	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	1.22	+/-6.92	5.74	+/-6.92	12.2	pCi/g		MXA	02/06/07	1544	607171	1
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.548	+/-0.101	0.0357	+/-0.101	0.0714	pCi/g		MJH1	02/05/07	1939	607292	
Americium-241	U	0.0181	+/-0.0684	0.0577	+/-0.0684	0.115	pCi/g						
Bismuth-212		0.295	+/-0.151	0.0741	+/-0.151	0.148	pCi/g						
Bismuth-214		0.490	+/-0.0654	0.0197	+/-0.0654	0.0393	pCi/g						
Cesium-134	UI	0.00	+/-0.0253	0.0126	+/-0.0253	0.0252	pCi/g						
Cesium-137	U	0.00806	+/-0.0162	0.0107	+/-0.0162	0.0213	pCi/g						
Cobalt-60	U	-0.000429	+/-0.0131	0.011	+/-0.0131	0.022	pCi/g						
Europium-152	U	-0.00724	+/-0.0385	0.0283	+/-0.0385	0.0565	pCi/g						
Europium-154	U	-0.0131	+/-0.0395	0.0327	+/-0.0395	0.0653	pCi/g						
Europium-155	U	0.0658	+/-0.0395	0.0334	+/-0.0395	0.0668	pCi/g						
Lead-212		0.529	+/-0.0532	0.0162	+/-0.0532	0.0323	pCi/g						
Lead-214		0.527	+/-0.0659	0.0193	+/-0.0659	0.0385	pCi/g						
Manganese-54	U	0.0129	+/-0.0187	0.00995	+/-0.0187	0.0199	pCi/g						
Niobium-94	U	0.00916	+/-0.0112	0.00987	+/-0.0112	0.0197	pCi/g						
Potassium-40		9.48	+/-0.792	0.0947	+/-0.792	0.189	pCi/g						
Radium-226		0.490	+/-0.0654	0.0197	+/-0.0654	0.0393	pCi/g						
Silver-108m	U	-0.00118	+/-0.012	0.00915	+/-0.012	0.0183	pCi/g						
Thallium-208		0.187	+/-0.031	0.00932	+/-0.031	0.0186	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00305	+/-0.0221	0.0182	+/-0.0221	0.0413	pCi/g		KSD1	02/09/07	0947	608308	
Rad Liquid Scintillation Analysis													

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Certificate of Analysis

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-012F
Sample ID: 180060013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>LSC, Tritium Dist, Solid – 3 pCi/g</i>												
Tritium	U	-0.611	+/-1.04	0.900	+/-1.04	1.89	pCi/g		AXD2	02/03/07	0354	607149
<i>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	0.023	+/-0.0861	0.0718	+/-0.0861	0.147	pCi/g		AXD2	02/03/07	0302	607153
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	-13.7	+/-47.4	32.2	+/-47.4	67.2	pCi/g		MXP1	02/06/07	1615	607148
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	-4.96	+/-8.95	7.74	+/-8.95	16.3	pCi/g		MXP1	02/06/07	1417	607147
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99	U	0.166	+/-0.192	0.157	+/-0.192	0.323	pCi/g		MXP1	02/07/07	1433	607151

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

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 905.0 Modified
7	EPA 906.0 Modified
8	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	81	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	89	(15%-125%)
Plutonium-242	Liquid Scint Pu241, Solid-ALL FS	80	(25%-125%)
Strontium-90	GFPC, Sr90, solid-ALL FSS	69	(25%-125%)

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-012F
Sample ID: 180060013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			69		(25%-125%)					
Iron-59		Liquid Scint Fe55, Solid-ALL FS			61		(15%-125%)					
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			87		(25%-125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			87		(25%-125%)					
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			79		(15%-125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			79		(15%-125%)					

Notes:

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-013F
Sample ID: 180060014
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 7.69%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.872	+/-0.142	0.0359	+/-0.142	0.0717	pCi/g		MJH1	02/05/07	1939	607292
Americium-241	U	0.0212	+/-0.0423	0.0353	+/-0.0423	0.0706	pCi/g					
Bismuth-212		0.611	+/-0.186	0.0796	+/-0.186	0.159	pCi/g					
Bismuth-214		0.585	+/-0.0773	0.0193	+/-0.0773	0.0385	pCi/g					
Cesium-134	UI	0.00	+/-0.0219	0.0136	+/-0.0219	0.0272	pCi/g					
Cesium-137	U	0.0141	+/-0.0172	0.0108	+/-0.0172	0.0215	pCi/g					
Cobalt-60	U	0.00656	+/-0.0128	0.0111	+/-0.0128	0.0222	pCi/g					
Europium-152	U	0.000931	+/-0.054	0.0281	+/-0.054	0.0562	pCi/g					
Europium-154	U	-0.0165	+/-0.0404	0.0332	+/-0.0404	0.0663	pCi/g					
Europium-155	U	0.0313	+/-0.0436	0.0292	+/-0.0436	0.0584	pCi/g					
Lead-212		0.850	+/-0.0785	0.016	+/-0.0785	0.0319	pCi/g					
Lead-214		0.666	+/-0.0771	0.0199	+/-0.0771	0.0398	pCi/g					
Manganese-54	U	-0.00673	+/-0.0125	0.0106	+/-0.0125	0.0213	pCi/g					
Niobium-94	U	0.00494	+/-0.0113	0.00973	+/-0.0113	0.0195	pCi/g					
Potassium-40		12.9	+/-0.922	0.0944	+/-0.922	0.189	pCi/g					
Radium-226		0.585	+/-0.0773	0.0193	+/-0.0773	0.0385	pCi/g					
Silver-108m	U	-0.00942	+/-0.011	0.00935	+/-0.011	0.0187	pCi/g					
Thallium-208		0.286	+/-0.0396	0.00961	+/-0.0396	0.0192	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.0183	+/-0.0215	0.0157	+/-0.0215	0.0362	pCi/g		KSD1	02/09/07	0947	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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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: February 9, 2007

Client Sample ID: 9312-0004-013F
Sample ID: 180060014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			67		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			67		(25%-125%)				

Notes:

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- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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: February 9, 2007

Client Sample ID: 9312-0004-014F
Sample ID: 180060015
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 8.49%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		1.01	+/-0.176	0.0609	+/-0.176	0.122	pCi/g		MJH1	02/05/07	1940	607292
Americium-241	U	0.0356	+/-0.0327	0.0268	+/-0.0327	0.0535	pCi/g					
Bismuth-212		0.850	+/-0.250	0.129	+/-0.250	0.258	pCi/g					
Bismuth-214		0.759	+/-0.111	0.0321	+/-0.111	0.0642	pCi/g					
Cesium-134	UI	0.00	+/-0.0343	0.0211	+/-0.0343	0.0422	pCi/g					
Cesium-137		0.228	+/-0.0375	0.019	+/-0.0375	0.038	pCi/g					
Cobalt-60	UI	0.00	+/-0.0464	0.0154	+/-0.0464	0.0308	pCi/g					
Europium-152	U	0.00245	+/-0.057	0.0437	+/-0.057	0.0873	pCi/g					
Europium-154	U	-0.0237	+/-0.065	0.0534	+/-0.065	0.107	pCi/g					
Europium-155	U	0.0581	+/-0.0622	0.0404	+/-0.0622	0.0808	pCi/g					
Lead-212		0.977	+/-0.103	0.0227	+/-0.103	0.0453	pCi/g					
Lead-214		0.804	+/-0.102	0.031	+/-0.102	0.0619	pCi/g					
Manganese-54	U	-0.014	+/-0.0209	0.0176	+/-0.0209	0.0352	pCi/g					
Niobium-94	U	-0.00675	+/-0.0192	0.0159	+/-0.0192	0.0317	pCi/g					
Potassium-40		14.2	+/-1.08	0.149	+/-1.08	0.297	pCi/g					
Radium-226		0.759	+/-0.111	0.0321	+/-0.111	0.0642	pCi/g					
Silver-108m	U	-0.0144	+/-0.0175	0.0147	+/-0.0175	0.0295	pCi/g					
Thallium-208		0.310	+/-0.0498	0.0171	+/-0.0498	0.0341	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.00331	+/-0.0242	0.0209	+/-0.0242	0.0497	pCi/g		KSD1	02/09/07	1149	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-014F
Sample ID: 180060015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium-90		GFPC, Sr90, solid-ALL FSS			66		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			66		(25%-125%)						

Notes:

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- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** 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
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 - 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: February 9, 2007

Client Sample ID: 9312-0004-015F
Sample ID: 180060016
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 9.79%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.566	+/-0.108	0.0312	+/-0.108	0.0623	pCi/g		MJH1	02/05/07	1940	607292
Americium-241	U	0.0305	+/-0.0347	0.0293	+/-0.0347	0.0586	pCi/g					
Bismuth-212		0.425	+/-0.137	0.0679	+/-0.137	0.136	pCi/g					
Bismuth-214		0.457	+/-0.0599	0.0166	+/-0.0599	0.0331	pCi/g					
Cesium-134	UI	0.00	+/-0.0126	0.0106	+/-0.0126	0.0213	pCi/g					
Cesium-137		0.023	+/-0.0151	0.00798	+/-0.0151	0.016	pCi/g					
Cobalt-60	U	-0.0128	+/-0.0103	0.00783	+/-0.0103	0.0157	pCi/g					
Europium-152	U	0.00158	+/-0.0344	0.0235	+/-0.0344	0.0471	pCi/g					
Europium-154	U	0.00665	+/-0.0328	0.0281	+/-0.0328	0.0562	pCi/g					
Europium-155	U	0.0488	+/-0.0347	0.0258	+/-0.0347	0.0517	pCi/g					
Lead-212		0.521	+/-0.0497	0.0134	+/-0.0497	0.0268	pCi/g					
Lead-214		0.475	+/-0.057	0.0172	+/-0.057	0.0344	pCi/g					
Manganese-54	U	-0.00187	+/-0.012	0.00895	+/-0.012	0.0179	pCi/g					
Niobium-94	U	0.00321	+/-0.0101	0.00795	+/-0.0101	0.0159	pCi/g					
Potassium-40		9.54	+/-0.699	0.075	+/-0.699	0.150	pCi/g					
Radium-226		0.457	+/-0.0599	0.0166	+/-0.0599	0.0331	pCi/g					
Silver-108m	U	0.00322	+/-0.00884	0.00794	+/-0.00884	0.0159	pCi/g					
Thallium-208		0.179	+/-0.0276	0.00809	+/-0.0276	0.0162	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.00567	+/-0.0227	0.0184	+/-0.0227	0.042	pCi/g		KSD1	02/09/07	0947	608308
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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Certificate of Analysis

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

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

Report Date: February 9, 2007

Client Sample ID: 9312-0004-015F
Sample ID: 180060016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			63		(25%-125%)				

Notes:

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 - 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
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 - 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: February 9, 2007

Client Sample ID: 9312-0004-016-1
Sample ID: 180060017
Matrix: TS
Collect Date: 30-JAN-07
Receive Date: 02-FEB-07
Collector: Client
Moisture: 10.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.729	+/-0.132	0.0535	+/-0.132	0.107	pCi/g		MJH1	02/05/07	1941	607292
Americium-241	U	0.0711	+/-0.106	0.0657	+/-0.106	0.131	pCi/g					
Bismuth-212		0.687	+/-0.226	0.0934	+/-0.226	0.187	pCi/g					
Bismuth-214		0.574	+/-0.0796	0.0217	+/-0.0796	0.0435	pCi/g					
Cesium-134	UI	0.00	+/-0.0345	0.0156	+/-0.0345	0.0311	pCi/g					
Cesium-137		0.238	+/-0.0325	0.0124	+/-0.0325	0.0248	pCi/g					
Cobalt-60		3.60	+/-0.201	0.0107	+/-0.201	0.0213	pCi/g					
Europium-152	U	-0.0106	+/-0.0419	0.0307	+/-0.0419	0.0614	pCi/g					
Europium-154	U	-0.0281	+/-0.0357	0.029	+/-0.0357	0.058	pCi/g					
Europium-155	U	0.0684	+/-0.0546	0.0369	+/-0.0546	0.0737	pCi/g					
Lead-212		0.718	+/-0.0659	0.0183	+/-0.0659	0.0365	pCi/g					
Lead-214		0.660	+/-0.0743	0.0217	+/-0.0743	0.0434	pCi/g					
Manganese-54	U	0.00534	+/-0.0154	0.0136	+/-0.0154	0.0272	pCi/g					
Niobium-94	U	0.00375	+/-0.0133	0.0114	+/-0.0133	0.0228	pCi/g					
Potassium-40		11.7	+/-0.801	0.0817	+/-0.801	0.163	pCi/g					
Radium-226		0.574	+/-0.0796	0.0217	+/-0.0796	0.0435	pCi/g					
Silver-108m	U	0.000259	+/-0.0119	0.0106	+/-0.0119	0.0211	pCi/g					
Thallium-208		0.223	+/-0.0323	0.0113	+/-0.0323	0.0225	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.0379	+/-0.0318	0.0211	+/-0.0318	0.050	pCi/g		KSD1	02/09/07	1149	608308

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	02/02/07	1207	607077

The following Analytical Methods were performed

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

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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: February 9, 2007

Client Sample ID: 9312-0004-016-I Project: YANK01204
Sample ID: 180060017 Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%	Acceptable Limits					
Strontium-90	GFPC, Sr90, solid-ALL FSS				67	(25%-125%)					
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS				67	(25%-125%)					

Notes:

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 - > Result is greater than value reported
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 - C Analyte has been confirmed by GC/MS analysis
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 - 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
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 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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QC Summary

Report Date: February 9, 2007
Page 1 of 9

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 180060

Sample Name	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 607169											
QC1201272523 180060008 DUP											
Mercurium-241		U	0.0678	U	0.0777	pCi/g	14	(0% - 100%)	AXA1	02/05/07	10:44
		Uncert:	+/-0.0899		+/-0.0956						
		TPU:	+/-0.0903		+/-0.0961						
Uranium-242		U	0.00	U	0.0284	pCi/g	200	(0% - 100%)			
		Uncert:	+/-0.0624		+/-0.0557						
		TPU:	+/-0.0624		+/-0.0559						
Uranium-243/244			0.093	U	0.0277	pCi/g	108	(0% - 100%)			
		Uncert:	+/-0.105		+/-0.0542						
		TPU:	+/-0.106		+/-0.0544						
QC1201272525 LCS											
Mercurium-241	11.5				11.5	pCi/g	100	(75%-125%)			
		Uncert:			+/-1.08						
		TPU:			+/-1.88						
Uranium-242				U	0.00	pCi/g					
		Uncert:			+/-0.0531						
		TPU:			+/-0.0531						
Uranium-243/244	13.8				13.8	pCi/g	100	(75%-125%)			
		Uncert:			+/-1.19						
		TPU:			+/-2.20						
QC1201272522 MB											
Mercurium-241				U	0.0233	pCi/g					
		Uncert:			+/-0.0576						
		TPU:			+/-0.0577						
Uranium-242				U	0.0279	pCi/g					
		Uncert:			+/-0.0546						
		TPU:			+/-0.0547						
Uranium-243/244				U	0.0549	pCi/g					
		Uncert:			+/-0.0761						
		TPU:			+/-0.0764						
QC1201272524 180060008 MS											
Mercurium-241	11.8	U	0.0678		12.4	pCi/g	105	(75%-125%)			
		Uncert:	+/-0.0899		+/-1.13						
		TPU:	+/-0.0903		+/-2.00						
Uranium-242		U	0.00	U	0.00	pCi/g					
		Uncert:	+/-0.0624		+/-0.0536						
		TPU:	+/-0.0624		+/-0.0536						
Uranium-243/244	14.2		0.093		13.1	pCi/g	92	(75%-125%)			
		Uncert:	+/-0.105		+/-1.16						
		TPU:	+/-0.106		+/-2.09						
Batch 607170											
QC1201272527 180060008 DUP											
Plutonium-238		U	0.0187	U	-0.00617	pCi/g	397	(0% - 100%)	AXA1	02/05/07	10:44

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QC Summary

Vorkorder: 180060

Page 2 of 9

irmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
atch	607170										
		Uncert:		+/-0.0497							
		TPU:		+/-0.0497							
lutonium-239/240		U	-0.00493	U	-0.0123	pCi/g	86	(0% - 100%)			
		Uncert:		+/-0.0548							
		TPU:		+/-0.0548							
QC1201272529	LCS										
lutonium-238				U	0.0439	pCi/g		(75%-125%)			
		Uncert:			+/-0.0701						
		TPU:			+/-0.0703						
lutonium-239/240		11.4			10.9	pCi/g	96	(75%-125%)			
		Uncert:			+/-1.03						
		TPU:			+/-1.61						
QC1201272526	MB										
lutonium-238				U	0.0231	pCi/g					
		Uncert:			+/-0.0454						
		TPU:			+/-0.0454						
lutonium-239/240				U	0.0528	pCi/g					
		Uncert:			+/-0.0808						
		TPU:			+/-0.081						
QC1201272528	180060008	MS									
lutonium-238			U	0.0187	0.128	pCi/g		(75%-125%)			
		Uncert:		+/-0.0497	+/-0.119						
		TPU:		+/-0.0497	+/-0.120						
lutonium-239/240		11.8	U	-0.00493	12.5	pCi/g	106	(75%-125%)			
		Uncert:		+/-0.0548	+/-1.14						
		TPU:		+/-0.0548	+/-1.83						
atch	607171										
QC1201272531	180060008	DUP									
lutonium-241			U	-1.15	U	4.55	pCi/g	0	(0% - 100%)	AXA1	02/06/07 16:16
		Uncert:		+/-5.42	+/-6.78						
		TPU:		+/-5.42	+/-6.80						
QC1201272533	LCS										
lutonium-241		134			109	pCi/g	81	(75%-125%)			02/06/07 16:48
		Uncert:			+/-10.3						
		TPU:			+/-14.7						
QC1201272530	MB										
lutonium-241				U	-0.392	pCi/g					02/06/07 16:00
		Uncert:			+/-5.74						
		TPU:			+/-5.74						
QC1201272532	180060008	MS									
lutonium-241		134	U	-1.15	128	pCi/g	95	(75%-125%)			02/06/07 16:32
		Uncert:		+/-5.42	+/-12.0						
		TPU:		+/-5.42	+/-17.4						
Rad Gamma Spec											
atch	607292										
QC1201272699	180060001	DUP									
actinium-228		0.841			0.951	pCi/g	12	(0% - 100%)	MJH1		02/05/07 19:42
		Uncert:		+/-0.177	+/-0.138						
					+/-0.138						

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

QC Summary

Vorkorder: 180060

Page 3 of 9

Itemname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 607292											
Americium-241		TPU:		+/-0.177							
		U		-0.0108	U	0.0463		pCi/g	321		(0% - 100%)
		Uncert:		+/-0.110		+/-0.049					
Ismuth-212		TPU:		+/-0.110		+/-0.049					
				0.741		0.527		pCi/g	34		(0% - 100%)
		Uncert:		+/-0.302		+/-0.139					
Ismuth-214		TPU:		+/-0.302		+/-0.139					
				0.786		0.888		pCi/g	12		(0% - 100%)
		Uncert:		+/-0.116		+/-0.0953					
Cesium-134		TPU:		+/-0.116		+/-0.0953					
		UI		0.00	UI	0.00		pCi/g	37		(0% - 100%)
		Uncert:		+/-0.0336		+/-0.0175					
Cesium-137		TPU:		+/-0.0336		+/-0.0175					
				0.0493		0.0421		pCi/g	16		(0% - 100%)
		Uncert:		+/-0.039		+/-0.0212					
Cobalt-60		TPU:		+/-0.039		+/-0.0212					
		U		0.0103	U	-0.00208		pCi/g	302		(0% - 100%)
		Uncert:		+/-0.0263		+/-0.0106					
Europium-152		TPU:		+/-0.0263		+/-0.0106					
		U		0.0522	U	-0.0197		pCi/g	443		(0% - 100%)
		Uncert:		+/-0.0891		+/-0.033					
Europium-154		TPU:		+/-0.0891		+/-0.033					
		U		-0.048	U	0.0232		pCi/g	572		(0% - 100%)
		Uncert:		+/-0.0877		+/-0.0363					
Europium-155		TPU:		+/-0.0877		+/-0.0363					
		U		0.0559	U	0.0288		pCi/g	64		(0% - 100%)
		Uncert:		+/-0.0796		+/-0.0432					
Cadmium-212		TPU:		+/-0.0796		+/-0.0432					
				0.830		0.847		pCi/g	2		(0% - 20%)
		Uncert:		+/-0.0875		+/-0.0714					
Cadmium-214		TPU:		+/-0.0875		+/-0.0714					
				0.942		1.00		pCi/g	6		(0% - 20%)
		Uncert:		+/-0.126		+/-0.0964					
Manganese-54		TPU:		+/-0.126		+/-0.0964					
		U		0.0118	UI	0.00		pCi/g	44		(0% - 100%)
		Uncert:		+/-0.0223		+/-0.0115					
Bismuth-94		TPU:		+/-0.0223		+/-0.0115					
		U		0.00166	U	-0.00248		pCi/g	1000		(0% - 100%)
		Uncert:		+/-0.0212		+/-0.00937					
Potassium-40		TPU:		+/-0.0212		+/-0.00937					
				13.9		14.7		pCi/g	6		(0% - 20%)
		Uncert:		+/-1.28		+/-0.960					
Strontium-226		TPU:		+/-1.28		+/-0.960					
				0.786		0.888		pCi/g	12		(0% - 100%)
		Uncert:		+/-0.116		+/-0.0953					
Silver-108m		TPU:		+/-0.116		+/-0.0953					
		U		-0.00159	U	0.000346		pCi/g	311		(0% - 100%)
		Uncert:		+/-0.019		+/-0.00893					

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

QC Summary

Vorkorder: 180060

Page 4 of 9

Itemname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
atch		607292									
thallium-208											
	TPU:	+/-0.019		+/-0.00893							
		0.240		0.259	pCi/g	8		(0% - 100%)			
	Uncert:	+/-0.0524		+/-0.0312							
	TPU:	+/-0.0524		+/-0.0312							
QC1201272700 LCS											
actinium-228			U	0.176	pCi/g					02/05/07	16:14
	Uncert:			+/-0.618							
	TPU:			+/-0.618							
mercurium-241		23.4		26.3	pCi/g		112	(75%-125%)			
	Uncert:			+/-3.14							
	TPU:			+/-3.14							
thorium-232			U	0.291	pCi/g						
	Uncert:			+/-1.05							
	TPU:			+/-1.05							
thorium-230			U	-0.0684	pCi/g						
	Uncert:			+/-0.235							
	TPU:			+/-0.235							
cesium-134			U	0.0412	pCi/g						
	Uncert:			+/-0.139							
	TPU:			+/-0.139							
cesium-137		9.48		9.80	pCi/g		103	(75%-125%)			
	Uncert:			+/-0.876							
	TPU:			+/-0.876							
barium-137m		13.7		14.6	pCi/g		107	(75%-125%)			
	Uncert:			+/-1.13							
	TPU:			+/-1.13							
europium-152			U	0.0333	pCi/g						
	Uncert:			+/-0.303							
	TPU:			+/-0.303							
europium-154			U	-0.121	pCi/g						
	Uncert:			+/-0.269							
	TPU:			+/-0.269							
europium-155			U	-0.305	pCi/g						
	Uncert:			+/-0.310							
	TPU:			+/-0.310							
gadolinium-153			U	-0.136	pCi/g						
	Uncert:			+/-0.198							
	TPU:			+/-0.198							
gadolinium-155			U	-0.0135	pCi/g						
	Uncert:			+/-0.251							
	TPU:			+/-0.251							
manganese-54			U	0.0609	pCi/g						
	Uncert:			+/-0.149							
	TPU:			+/-0.149							
niobium-94			U	0.0443	pCi/g						
	Uncert:			+/-0.117							
	TPU:			+/-0.117							
potassium-40			U	-0.161	pCi/g						

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

QC Summary

Vorkorder: 180060

Page 5 of 9

isotope	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch										
radium-226		U	-0.0684	pCi/g			(75%-125%)			
silver-108m		U	0.067	pCi/g						
thallium-208		U	0.00159	pCi/g						
QC1201272698 MB										
actinium-228		U	0.023	pCi/g					02/05/07	19:41
mercurium-241		U	-0.00428	pCi/g						
thorium-232		U	0.0107	pCi/g						
thorium-230		U	0.0025	pCi/g						
cesium-134		U	-0.00223	pCi/g						
cesium-137		U	0.000367	pCi/g						
barium-137m		U	0.00472	pCi/g						
thorium-232		U	0.00821	pCi/g						
thorium-232		U	0.00578	pCi/g						
thorium-232		U	0.0085	pCi/g						
thorium-232		U	0.000933	pCi/g						
thorium-232		UI	0.00	pCi/g						

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

QC Summary

Vorkorder: 180060

Page 6 of 9

armname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
atch	607292										
Manganese-54			U	0.0039	pCi/g						
				Uncert:							
				TPU:							
niobium-94			U	0.0122	pCi/g						
				Uncert:							
				TPU:							
potassium-40			U	0.155	pCi/g						
				Uncert:							
				TPU:							
radium-226			U	0.0025	pCi/g						
				Uncert:							
				TPU:							
silver-108m			U	-0.000433	pCi/g						
				Uncert:							
				TPU:							
thallium-208			UI	0.00	pCi/g						
				Uncert:							
				TPU:							
Rad Gas Flow											
atch	608308										
QC1201275064	180060001	DUP									
strontium-90			U	0.026	pCi/g	0		(0% - 100%)	KSD1	02/09/07	09:47
				Uncert:							
				TPU:							
QC1201275066	LCS										
strontium-90			1.47		pCi/g		86	(75%-125%)		02/09/07	11:49
				Uncert:							
				TPU:							
QC1201275063	MB										
strontium-90			U	0.0282	pCi/g					02/09/07	09:47
				Uncert:							
				TPU:							
QC1201275065	180060001	MS									
strontium-90			12.1	U	0.026	pCi/g		2* (75%-125%)		02/09/07	11:50
				Uncert:							
				TPU:							
Rad Liquid Scintillation											
atch	607147										
QC1201272485	180060008	DUP									
nickel-63			U	-0.51	pCi/g	0		(0% - 100%)	MXP1	02/06/07	14:49
				Uncert:							
				TPU:							
QC1201272487	LCS										
nickel-63			556		pCi/g		89	(75%-125%)		02/06/07	15:21
				Uncert:							
				TPU:							
QC1201272484	MB										
nickel-63			U	-1.71	pCi/g					02/06/07	14:33

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 180060

Page 7 of 9

irmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
atch	607147										
				Uncert:							+/-8.49
				TPU:							+/-8.49
QC1201272486	180060008	MS									
ickel-63			U	585	-0.51			89 (75%-125%)			02/06/07 15:05
				Uncert:	+/-8.56						+/-24.3
				TPU:	+/-8.56						+/-30.8
atch	607148										
QC1201272489	180060008	DUP									
on-55			U		-25.7	U		0 (0% - 100%) MXP1			02/06/07 16:49
				Uncert:	+/-46.1						+/-46.6
				TPU:	+/-46.1						+/-46.6
QC1201272491	LCS										
on-55				1200				101 (75%-125%)			02/06/07 17:22
				Uncert:							+/-70.3
				TPU:							+/-97.7
QC1201272488	MB										
on-55						U					-36.9
				Uncert:							+/-42.9
				TPU:							+/-42.9
QC1201272490	180060008	MS									
on-55			U	1230	-25.7			106 (75%-125%)			02/06/07 17:06
				Uncert:	+/-46.1						+/-78.2
				TPU:	+/-46.1						+/-107
atch	607149										
QC1201272493	180060008	DUP									
ritium			U		0.792	U		0 (0% - 100%) AXD2			02/03/07 04:57
				Uncert:	+/-1.08						+/-1.02
				TPU:	+/-1.08						+/-1.02
QC1201272495	LCS										
ritium				6.34				101 (75%-125%)			02/03/07 06:00
				Uncert:							+/-0.789
				TPU:							+/-0.797
QC1201272492	MB										
ritium						U					0.236
				Uncert:							+/-0.536
				TPU:							+/-0.536
QC1201272494	180060008	MS									
ritium			U	6.63	0.792			94 (75%-125%)			02/03/07 05:29
				Uncert:	+/-1.08						+/-1.39
				TPU:	+/-1.08						+/-1.39
atch	607151										
QC1201272497	180060008	DUP									
echnetium-99			U		0.142	U		0 (0% - 100%) MXP1			02/07/07 15:37
				Uncert:	+/-0.183						+/-0.194
				TPU:	+/-0.183						+/-0.194
QC1201272499	LCS										
echnetium-99				16.7				92 (75%-125%)			02/07/07 16:24
				Uncert:							+/-0.623
				TPU:							+/-0.730

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 180060

Page 8 of 9

irmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
atch	607151										
QC1201272496	MB										
Technetium-99			U	0.219	pCi/g					02/07/07	15:05
				Uncert:							
				TPU:							
QC1201272498	180060008	MS									
Technetium-99		16.9	U	0.142	pCi/g		93	(75%-125%)		02/07/07	16:08
				Uncert:							
				TPU:							
atch	607153										
QC1201272505	180060008	DUP									
Carbon-14			U	0.00632	pCi/g	0		(0% - 100%)	4XD2	02/03/07	05:06
				Uncert:							
				TPU:							
QC1201272507	LCS										
Carbon-14		6.65		6.61	pCi/g		99	(75%-125%)		02/03/07	07:09
				Uncert:							
				TPU:							
QC1201272504	MB										
Carbon-14			U	0.00424	pCi/g					02/03/07	04:04
				Uncert:							
				TPU:							
QC1201272506	180060008	MS									
Carbon-14		6.81	U	0.00632	pCi/g		101	(75%-125%)		02/03/07	06:08
				Uncert:							
				TPU:							

Notes:

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 180060

Page 9 of 9

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

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

* Indicates analyte is a surrogate compound.

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

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

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

General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 180812
SDG: MSR#07-0079**

February 19, 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 February 16, 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>
180812001	9312-0004-017I
180812002	9312-0004-018I
180812003	9312-0004-019I
180812004	9312-0004-020I
180812005	9312-0004-021I

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

Five soil samples were analyzed for FSSGAM and Strontium-90.

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 19 February 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

**Chain of Custody
and
Supporting
Documentation**

Figure 1. Sample Check-in List

Date/Time Received: 2-16-07 9:30

SDG#: MSR # 07-0079

Work Order Number: 180812

Shipping Container ID: 7906 7289 7003 Chain of Custody #: 2007-00038

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 90
5. Vermiculite/packing materials is: Wet Dry NA
6. Number of samples in shipping container: 5
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: To Site Date: 2-16-07 9:30

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCOC/Work Order: <u>180812</u>
Date Received: <u>2-16-07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>TS</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Coolant # ice bags blue ice dry ice <u>none</u> other describe <u>90 - no ice</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>	
8 Samples received within holding time?	<input checked="" type="checkbox"/>			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14 Air Bill ,Tracking #'s, & Additional Comments				<u>7906 7289 7063</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?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>80 CPM</u>
B PCB Regulated?	<input checked="" type="checkbox"/>			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?	<input checked="" type="checkbox"/>			
PM (or PMA) review of Hazard classification: <input checked="" type="checkbox"/>				Initials <u>[Signature]</u> Date: <u>2/16/07</u>

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 180812**

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: 610737
Prep Batch Number: 610663

Sample ID	Client ID
180812001	9312-0004-017I
180812002	9312-0004-018I
180812003	9312-0004-019I
180812004	9312-0004-020I
180812005	9312-0004-021I
1201280354	Method Blank (MB)
1201280355	180812001(9312-0004-017I) Sample Duplicate (DUP)
1201280356	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 13.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 180812001 (9312-0004-0171).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak-width.	Cobalt-60	180812005
UI	Data rejected due to low abundance.	Cesium-134	180812001
			180812002
			180812003
			180812004
			180812005
		Europium-155	180812003
UI	Data rejected due to no valid peak.	Cesium-137	1201280354

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: 610704
Prep Batch Number: 610665
Dry Soil Prep GL-RAD-A-021 Batch Number: 610663

Sample ID	Client ID
180812001	9312-0004-017I
180812002	9312-0004-018I
180812003	9312-0004-019I
180812004	9312-0004-020I
180812005	9312-0004-021I
1201280317	Method Blank (MB)
1201280318	180812001(9312-0004-017I) Sample Duplicate (DUP)
1201280319	180812001(9312-0004-017I) Matrix Spike (MS)
1201280320	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: 180812001 (9312-0004-017I).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Chemical Recoveries

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Certification Statement

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

Review Validation:

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

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

Reviewer/Date:

Kat Bellatt 2/21/07

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#07-0079 GEL Work Order: 180812

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: February 21, 2007

Client Sample ID:	9312-0004-017I	Project:	YANK01204
Sample ID:	180812001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	13-FEB-07		
Receive Date:	16-FEB-07		
Collector:	Client		
Moisture:	5.63%		

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

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

Actinium-228		0.656	+/-0.114	0.0321	+/-0.114	0.0641	pCi/g		MJH1	02/17/07	1316	610737
Americium-241	U	0.0484	+/-0.0578	0.0475	+/-0.0578	0.0949	pCi/g					
Bismuth-212		0.387	+/-0.122	0.0644	+/-0.122	0.129	pCi/g					
Bismuth-214		0.510	+/-0.0659	0.0165	+/-0.0659	0.0329	pCi/g					
Cesium-134	UI	0.00	+/-0.0156	0.0105	+/-0.0156	0.0209	pCi/g					
Cesium-137		0.188	+/-0.0252	0.00908	+/-0.0252	0.0181	pCi/g					
Cobalt-60		0.219	+/-0.0304	0.00872	+/-0.0304	0.0174	pCi/g					
Europium-152	U	-0.0101	+/-0.0386	0.0233	+/-0.0386	0.0465	pCi/g					
Europium-154	U	-0.00744	+/-0.0334	0.0277	+/-0.0334	0.0553	pCi/g					
Europium-155	U	0.0321	+/-0.0338	0.0264	+/-0.0338	0.0528	pCi/g					
Lead-212		0.683	+/-0.0607	0.0134	+/-0.0607	0.0267	pCi/g					
Lead-214		0.612	+/-0.0654	0.0163	+/-0.0654	0.0326	pCi/g					
Manganese-54	U	0.0107	+/-0.0116	0.00887	+/-0.0116	0.0177	pCi/g					
Niobium-94	U	0.00043	+/-0.00954	0.00803	+/-0.00954	0.0161	pCi/g					
Potassium-40		11.0	+/-0.843	0.0675	+/-0.843	0.135	pCi/g					
Radium-226		0.510	+/-0.0659	0.0165	+/-0.0659	0.0329	pCi/g					
Silver-108m	U	0.00776	+/-0.00867	0.00779	+/-0.00867	0.0156	pCi/g					
Thallium-208		0.200	+/-0.0274	0.00857	+/-0.0274	0.0171	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.0148	+/-0.0185	0.0181	+/-0.0185	0.0428	pCi/g		KSD1	02/20/07	1133	610704
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	02/16/07	1032	610663

The following Analytical Methods were performed

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

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: February 21, 2007

Client Sample ID: 9312-0004-0171
Sample ID: 180812001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90		GFPC, Sr90, solid-ALL FSS			75		(25%-125%)				
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			75		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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.

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: February 21, 2007

Client Sample ID: 9312-0004-0181
Sample ID: 180812002
Matrix: TS
Collect Date: 13-FEB-07
Receive Date: 16-FEB-07
Collector: Client
Moisture: 7.22%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.753	+/-0.140	0.0393	+/-0.140	0.0785	pCi/g		MJH1	02/17/07	1316	610737
Americium-241	U	0.0326	+/-0.0219	0.0179	+/-0.0219	0.0358	pCi/g					
Bismuth-212		0.459	+/-0.148	0.0897	+/-0.148	0.179	pCi/g					
Bismuth-214		0.690	+/-0.0878	0.0222	+/-0.0878	0.0444	pCi/g					
Cesium-134	UI	0.00	+/-0.0217	0.0148	+/-0.0217	0.0295	pCi/g					
Cesium-137		0.196	+/-0.0314	0.0125	+/-0.0314	0.0249	pCi/g					
Cobalt-60	U	0.0162	+/-0.0198	0.0116	+/-0.0198	0.0232	pCi/g					
Europium-152	U	-0.0327	+/-0.0415	0.0292	+/-0.0415	0.0583	pCi/g					
Europium-154	U	-0.0171	+/-0.0416	0.0342	+/-0.0416	0.0683	pCi/g					
Europium-155	U	0.00311	+/-0.0413	0.0274	+/-0.0413	0.0548	pCi/g					
Lead-212		0.739	+/-0.0779	0.0157	+/-0.0779	0.0313	pCi/g					
Lead-214		0.658	+/-0.0783	0.0211	+/-0.0783	0.0422	pCi/g					
Manganese-54	U	0.0125	+/-0.0124	0.0113	+/-0.0124	0.0226	pCi/g					
Niobium-94	U	0.0109	+/-0.0129	0.011	+/-0.0129	0.0221	pCi/g					
Potassium-40		11.4	+/-0.786	0.0998	+/-0.786	0.200	pCi/g					
Radium-226		0.690	+/-0.0878	0.0222	+/-0.0878	0.0444	pCi/g					
Silver-108m	U	-0.0106	+/-0.0119	0.0101	+/-0.0119	0.0201	pCi/g					
Thallium-208		0.250	+/-0.0382	0.0116	+/-0.0382	0.0231	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.00454	+/-0.0201	0.0177	+/-0.0201	0.0422	pCi/g		KSD1	02/20/07	1133	610704
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	02/16/07	1032	610663

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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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: February 21, 2007

Client Sample ID: 9312-0004-0181
Sample ID: 180812002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium-90		GFPC, Sr90, solid-ALL FSS			76		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			76		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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.

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: February 21, 2007

Client Sample ID: 9312-0004-0191
Sample ID: 180812003
Matrix: TS
Collect Date: 13-FEB-07
Receive Date: 16-FEB-07
Collector: Client
Moisture: 9.77%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.781	+/-0.114	0.0205	+/-0.114	0.0409	pCi/g		MJH1	02/17/07	1317	610737
Americium-241	U	0.00859	+/-0.0563	0.0453	+/-0.0563	0.0905	pCi/g					
Bismuth-212		0.368	+/-0.139	0.0482	+/-0.139	0.0964	pCi/g					
Bismuth-214		0.608	+/-0.0685	0.0132	+/-0.0685	0.0263	pCi/g					
Cesium-134	UI	0.00	+/-0.0152	0.00848	+/-0.0152	0.0169	pCi/g					
Cesium-137		0.0762	+/-0.0146	0.00666	+/-0.0146	0.0133	pCi/g					
Cobalt-60	U	0.0125	+/-0.00794	0.0072	+/-0.00794	0.0144	pCi/g					
Europium-152	U	0.0114	+/-0.0271	0.0185	+/-0.0271	0.0369	pCi/g					
Europium-154	U	0.0145	+/-0.0282	0.0207	+/-0.0282	0.0415	pCi/g					
Europium-155	UI	0.00	+/-0.0337	0.0249	+/-0.0337	0.0497	pCi/g					
Lead-212		0.776	+/-0.0666	0.011	+/-0.0666	0.022	pCi/g					
Lead-214		0.686	+/-0.0658	0.0129	+/-0.0658	0.0258	pCi/g					
Manganese-54	U	0.013	+/-0.0121	0.00703	+/-0.0121	0.0141	pCi/g					
Niobium-94	U	0.00263	+/-0.00767	0.00648	+/-0.00767	0.013	pCi/g					
Potassium-40		11.0	+/-0.712	0.0581	+/-0.712	0.116	pCi/g					
Radium-226		0.608	+/-0.0685	0.0132	+/-0.0685	0.0263	pCi/g					
Silver-108m	U	-0.0027	+/-0.00701	0.00601	+/-0.00701	0.012	pCi/g					
Thallium-208		0.237	+/-0.0275	0.00649	+/-0.0275	0.013	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.00873	+/-0.0232	0.0179	+/-0.0232	0.0431	pCi/g		KSD1	02/20/07	1133	610704
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	02/16/07	1032	610663

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
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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: February 21, 2007

Client Sample ID: 9312-0004-0191
Sample ID: 180812003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium-90		GFPC, Sr90, solid-ALL FSS			70		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			70		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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.

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: February 21, 2007

Client Sample ID: 9312-0004-0201
Sample ID: 180812004
Matrix: TS
Collect Date: 13-FEB-07
Receive Date: 16-FEB-07
Collector: Client
Moisture: 9.93%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.719	+/-0.109	0.0369	+/-0.109	0.0737	pCi/g		MJH1	02/17/07	1317	610737
Americium-241	U	0.0224	+/-0.0184	0.0136	+/-0.0184	0.0272	pCi/g					
Bismuth-212		0.457	+/-0.185	0.074	+/-0.185	0.148	pCi/g					
Bismuth-214		0.567	+/-0.0806	0.0189	+/-0.0806	0.0377	pCi/g					
Cesium-134	UI	0.0301	+/-0.0167	0.0134	+/-0.0167	0.0268	pCi/g					
Cesium-137		0.0809	+/-0.0211	0.00984	+/-0.0211	0.0197	pCi/g					
Cobalt-60	U	0.0141	+/-0.0147	0.0129	+/-0.0147	0.0258	pCi/g					
Europium-152	U	-0.00691	+/-0.0425	0.0248	+/-0.0425	0.0496	pCi/g					
Europium-154	U	0.0215	+/-0.0502	0.0369	+/-0.0502	0.0738	pCi/g					
Europium-155	U	0.0418	+/-0.0322	0.0216	+/-0.0322	0.0432	pCi/g					
Lead-212		0.692	+/-0.0672	0.013	+/-0.0672	0.0261	pCi/g					
Lead-214		0.596	+/-0.073	0.0174	+/-0.073	0.0347	pCi/g					
Manganese-54	U	0.00273	+/-0.0125	0.0108	+/-0.0125	0.0216	pCi/g					
Niobium-94	U	-0.00124	+/-0.0118	0.0102	+/-0.0118	0.0204	pCi/g					
Potassium-40		10.4	+/-0.565	0.071	+/-0.565	0.142	pCi/g					
Radium-226		0.567	+/-0.0806	0.0189	+/-0.0806	0.0377	pCi/g					
Silver-108m	U	-0.00743	+/-0.0103	0.00857	+/-0.0103	0.0171	pCi/g					
Thallium-208		0.241	+/-0.0322	0.00982	+/-0.0322	0.0196	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.00553	+/-0.0207	0.0184	+/-0.0207	0.0438	pCi/g		KSD1	02/20/07	1133	610704
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	02/16/07	1032	610663

The following Analytical Methods were performed

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

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

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

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

Report Date: February 21, 2007

Client Sample ID: 9312-0004-0201
Sample ID: 180812004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90	GFPC, Sr90, solid-ALL FSS				67		(25%-125%)				
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS				67		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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: February 21, 2007

Client Sample ID: 9312-0004-0211
Sample ID: 180812005
Matrix: TS
Collect Date: 13-FEB-07
Receive Date: 16-FEB-07
Collector: Client
Moisture: 9.35%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.754	+/-0.107	0.0203	+/-0.107	0.0405	pCi/g					
Americium-241	U	0.053	+/-0.033	0.0272	+/-0.033	0.0543	pCi/g		MJH1	02/17/07	1317	610737
Bismuth-212		0.474	+/-0.118	0.0434	+/-0.118	0.0868	pCi/g					
Bismuth-214		0.521	+/-0.0616	0.0114	+/-0.0616	0.0227	pCi/g					
Cesium-134	UI	0.00	+/-0.0114	0.00754	+/-0.0114	0.0151	pCi/g					
Cesium-137		0.128	+/-0.0158	0.00608	+/-0.0158	0.0122	pCi/g					
Cobalt-60	UI	0.00	+/-0.0122	0.00597	+/-0.0122	0.0119	pCi/g					
Europium-152	U	-0.00262	+/-0.0282	0.017	+/-0.0282	0.0339	pCi/g					
Europium-154	U	0.0157	+/-0.0242	0.018	+/-0.0242	0.0359	pCi/g					
Europium-155	U	0.0261	+/-0.0297	0.0205	+/-0.0297	0.041	pCi/g					
Lead-212		0.706	+/-0.0583	0.0102	+/-0.0583	0.0203	pCi/g					
Lead-214		0.612	+/-0.0631	0.0122	+/-0.0631	0.0243	pCi/g					
Manganese-54	U	0.00876	+/-0.0139	0.00604	+/-0.0139	0.0121	pCi/g					
Niobium-94	U	0.00645	+/-0.00697	0.00598	+/-0.00697	0.012	pCi/g					
Potassium-40		11.2	+/-0.720	0.0514	+/-0.720	0.103	pCi/g					
Radium-226		0.521	+/-0.0616	0.0114	+/-0.0616	0.0227	pCi/g					
Silver-108m	U	-0.00267	+/-0.00662	0.0057	+/-0.00662	0.0114	pCi/g					
Thallium-208		0.226	+/-0.026	0.00587	+/-0.026	0.0117	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.0246	+/-0.0148	0.0172	+/-0.0148	0.0409	pCi/g		KSD1	02/20/07	1133	610704
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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	02/16/07	1032	610663

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
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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: February 21, 2007

Client Sample ID: 9312-0004-0211
Sample ID: 180812005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits				
Strontium-90	GFPC, Sr90, solid-ALL	FSS			79		(25%-125%)				
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL	FSS			79		(25%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - ** Analyte is a surrogate compound
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 - > Result is greater than value reported
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 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
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 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
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 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: February 21, 2007

Page 1 of 5

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 180812

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 610737											
QC1201280355 180812001 DUP											
Actinium-228		0.656		0.761	pCi/g	15		(0% - 100%)	MJH1	02/19/07	09:14
		Uncert: +/-0.114		+/-0.144							
		TPU: +/-0.114		+/-0.144							
Americium-241	U	0.0484	U	0.0675	pCi/g	33		(0% - 100%)			
		Uncert: +/-0.0578		+/-0.0802							
		TPU: +/-0.0578		+/-0.0802							
Bismuth-212		0.387		0.461	pCi/g	17		(0% - 100%)			
		Uncert: +/-0.122		+/-0.226							
		TPU: +/-0.122		+/-0.226							
Bismuth-214		0.510		0.539	pCi/g	6		(0% - 100%)			
		Uncert: +/-0.0659		+/-0.0945							
		TPU: +/-0.0659		+/-0.0945							
Cesium-134	UI	0.00	U	0.0326	pCi/g	33		(0% - 100%)			
		Uncert: +/-0.0156		+/-0.0202							
		TPU: +/-0.0156		+/-0.0202							
Cesium-137		0.188		0.227	pCi/g	19		(0% - 100%)			
		Uncert: +/-0.0252		+/-0.041							
		TPU: +/-0.0252		+/-0.041							
Cobalt-60		0.219		0.224	pCi/g	2		(0% - 100%)			
		Uncert: +/-0.0304		+/-0.0424							
		TPU: +/-0.0304		+/-0.0424							
Europium-152	U	-0.0101	U	-0.0261	pCi/g	88		(0% - 100%)			
		Uncert: +/-0.0386		+/-0.0586							
		TPU: +/-0.0386		+/-0.0586							
Europium-154	U	-0.00744	U	-0.0124	pCi/g	50		(0% - 100%)			
		Uncert: +/-0.0334		+/-0.0545							
		TPU: +/-0.0334		+/-0.0545							
Europium-155	U	0.0321	U	0.0512	pCi/g	46		(0% - 100%)			
		Uncert: +/-0.0338		+/-0.0547							
		TPU: +/-0.0338		+/-0.0547							
Lead-212		0.683		0.666	pCi/g	3		(0% - 20%)			
		Uncert: +/-0.0607		+/-0.0734							
		TPU: +/-0.0607		+/-0.0734							
Lead-214		0.612		0.595	pCi/g	3		(0% - 20%)			
		Uncert: +/-0.0654		+/-0.0883							
		TPU: +/-0.0654		+/-0.0883							
Manganese-54	U	0.0107	U	0.0172	pCi/g	46		(0% - 100%)			
		Uncert: +/-0.0116		+/-0.0204							
		TPU: +/-0.0116		+/-0.0204							
Niobium-94	U	0.00043	U	0.00147	pCi/g	110		(0% - 100%)			
		Uncert: +/-0.00954		+/-0.016							
		TPU: +/-0.00954		+/-0.016							

GEL LABORATORIES LLC

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QC Summary

Workorder: 180812

Page 2 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	610737									
Potassium-40		11.0	11.1	pCi/g	1		(0% - 20%)			
	Uncert:	+/-0.843	+/-0.952							
	TPU:	+/-0.843	+/-0.952							
Radium-226		0.510	0.539	pCi/g	6		(0% - 100%)			
	Uncert:	+/-0.0659	+/-0.0945							
	TPU:	+/-0.0659	+/-0.0945							
Silver-108m	U	0.00776	U -0.00815	pCi/g	8090		(0% - 100%)			
	Uncert:	+/-0.00867	+/-0.0167							
	TPU:	+/-0.00867	+/-0.0167							
Thallium-208		0.200	0.214	pCi/g	7		(0% - 100%)			
	Uncert:	+/-0.0274	+/-0.0422							
	TPU:	+/-0.0274	+/-0.0422							
QC1201280356	LCS									
Actinium-228			U 0.375	pCi/g					02/19/07	09:20
	Uncert:		+/-0.617							
	TPU:		+/-0.617							
Americium-241	23.4		24.8	pCi/g		106	(75%-125%)			
	Uncert:		+/-2.84							
	TPU:		+/-2.84							
Bismuth-212			U 0.529	pCi/g						
	Uncert:		+/-0.984							
	TPU:		+/-0.984							
Bismuth-214			U -0.0269	pCi/g						
	Uncert:		+/-0.219							
	TPU:		+/-0.219							
Cesium-134			U -0.0253	pCi/g						
	Uncert:		+/-0.162							
	TPU:		+/-0.162							
Cesium-137	9.47		9.76	pCi/g		103	(75%-125%)			
	Uncert:		+/-0.885							
	TPU:		+/-0.885							
Cobalt-60	13.6		14.5	pCi/g		106	(75%-125%)			
	Uncert:		+/-1.13							
	TPU:		+/-1.13							
Europium-152			U 0.0784	pCi/g						
	Uncert:		+/-0.296							
	TPU:		+/-0.296							
Europium-154			U 0.0374	pCi/g						
	Uncert:		+/-0.284							
	TPU:		+/-0.284							
Europium-155			U 0.205	pCi/g						
	Uncert:		+/-0.308							
	TPU:		+/-0.308							
Lead-212			U 0.0384	pCi/g						
	Uncert:		+/-0.161							
	TPU:		+/-0.161							
Lead-214			U -0.0579	pCi/g						
	Uncert:		+/-0.223							

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QC Summary

Workorder: 180812

Page 3 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	610737									
Manganese-54	TPU:		+/-0.223							
		U	-0.035	pCi/g						
	Uncert:		+/-0.136							
Niobium-94	TPU:		+/-0.136							
		U	-0.0694	pCi/g						
	Uncert:		+/-0.135							
Potassium-40	TPU:		+/-0.135							
		U	0.510	pCi/g						
	Uncert:		+/-0.944							
Radium-226	TPU:		+/-0.944				(75%-125%)			
		U	-0.0269	pCi/g						
	Uncert:		+/-0.219							
Silver-108m	TPU:		+/-0.219							
		U	0.0725	pCi/g						
	Uncert:		+/-0.175							
Thallium-208	TPU:		+/-0.175							
		U	-0.0252	pCi/g						
	Uncert:		+/-0.121							
	TPU:		+/-0.121							
QC1201280354	MB									
Actinium-228									02/19/07	09:13
		U	-0.0283	pCi/g						
	Uncert:		+/-0.106							
Americium-241	TPU:		+/-0.106							
		U	-0.275	pCi/g						
	Uncert:		+/-0.0446							
Bismuth-212	TPU:		+/-0.0446							
		U	0.0239	pCi/g						
	Uncert:		+/-0.215							
Bismuth-214	TPU:		+/-0.215							
		U	0.0109	pCi/g						
	Uncert:		+/-0.0598							
Cesium-134	TPU:		+/-0.0598							
		U	-0.00686	pCi/g						
	Uncert:		+/-0.0273							
Cesium-137	TPU:		+/-0.0273							
		UI	0.00	pCi/g						
	Uncert:		+/-0.0261							
Cobalt-60	TPU:		+/-0.0261							
		U	0.0305	pCi/g						
	Uncert:		+/-0.0273							
Europium-152	TPU:		+/-0.0273							
		U	-0.076	pCi/g						
	Uncert:		+/-0.0739							
Europium-154	TPU:		+/-0.0739							
		U	-0.0483	pCi/g						
	Uncert:		+/-0.0728							
Europium-155	TPU:		+/-0.0728							
		U	0.031	pCi/g						

GEL LABORATORIES LLC

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QC Summary

Workorder: 180812

Page 4 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	610737									
Lead-212										
			Uncert:							
			TPU:							
		U		0.0329						
			Uncert:							
			TPU:							
Lead-214		U		-0.0535						
Manganese-54										
			Uncert:							
			TPU:							
		U		-0.0373						
Niobium-94										
			Uncert:							
			TPU:							
		U		0.00643						
Potassium-40										
			Uncert:							
			TPU:							
		U		0.124						
Radium-226										
			Uncert:							
			TPU:							
		U		0.0109						
Silver-108m										
			Uncert:							
			TPU:							
		U		0.00645						
Thallium-208										
			Uncert:							
			TPU:							
		U		0.00571						
			Uncert:							
			TPU:							
		U		+/-0.0305						
			TPU:							
		U		+/-0.0305						
Rad Gas Flow										
Batch	610704									
QC1201280318	180812001	DUP								
Strontium-90			U	-0.0148	U	-0.00319	pCi/g	0	(0% - 100%) KSD1	02/20/07 11:33
			Uncert:	+/-0.0185		+/-0.0247				
			TPU:	+/-0.0185		+/-0.0247				
QC1201280320	LCS									
Strontium-90			1.49			1.45	pCi/g	98	(75%-125%)	02/20/07 11:33
			Uncert:			+/-0.110				
			TPU:			+/-0.119				
QC1201280317	MB									
Strontium-90					U	-0.00394	pCi/g			02/20/07 11:33
			Uncert:			+/-0.0241				
			TPU:			+/-0.0241				
QC1201280319	180812001	MS								
Strontium-90			4.87	U	-0.0148	4.62	pCi/g	95	(75%-125%)	02/20/07 11:33
			Uncert:	+/-0.0185		+/-0.355				
			TPU:	+/-0.0185		+/-0.382				

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

GEL LABORATORIES LLC

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

QC Summary

Workorder: 180812

Page 5 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
*	A quality control analyte recovery is outside of specified acceptance criteria									
**	Analyte is a surrogate compound									
<	Result is less than value reported									
>	Result is greater than value reported									
A	The TIC is a suspected aldol-condensation product									
B	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									

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.

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

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

Revision 0

RCA North of PAB Tank Farm
SURVEY UNIT 9312-0004

RELEASE RECORD
Attachment 4

Survey Unit: 9312-0004
Area Description: RCA North of PAB & Tank Farm
Classification: 1
Survey Media: Surface Soils
Type of Survey: Final Status Survey
Number of Measurements: 15 Static, 6 Investigative

STATISTICS on TOTAL
POPULATION

	Cs-137	Co-60	Sr-90
DCGL _{op} (pCi/g):	4.75E+00	2.29E+00	9.30E-01
Minimum Value:	-7.84E-03	-1.28E-02	-2.46E-02
Maximum Value:	7.41E-01	3.60E+00	6.31E-02
Mean:	1.51E-01	1.90E-01	2.40E-02
Median:	9.81E-02	1.34E-02	2.22E-02
Standard Deviation:	1.86E-01	7.63E-01	2.77E-02

STATISTICS on NON-
PARAMETRIC POPULATION

	Cs-137	Co-60	Sr-90
DCGL _{op} (pCi/g):	4.75E+00	2.29E+00	9.30E-01
Minimum Value:	-7.84E-03	-1.28E-02	-3.31E-03
Maximum Value:	6.04E-01	9.47E-02	6.31E-02
Mean:	1.11E-01	1.55E-02	3.14E-02
Median:	4.93E-02	1.03E-02	2.99E-02
Standard Deviation:	1.55E-01	2.72E-02	2.39E-02

Sample ID	GPS Coordinates		Cs-137				Co-60				Sr-90				Fraction of DCGL
			Result	2σ	MDA	Identified	Result	2σ	MDA	Identified	Result	2σ	MDA	Identified	
	North	East	(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		
9312-0004-001F	236829.64	668622.57	4.93E-02	0.039	4.30E-02	+	1.03E-02	0.026	4.57E-02		2.60E-02	0.023	3.62E-02	+	0.043
9312-0004-002F	236829.64	668658.88	8.71E-02	0.033	3.85E-02	+	-3.14E-05	0.025	4.10E-02		5.95E-02	0.032	4.53E-02	+	0.082
9312-0004-003F	236798.19	668604.41	1.55E-01	0.039	3.90E-02	+	2.69E-02	0.024	4.43E-02	+	3.38E-02	0.025	3.89E-02	+	0.081
9312-0004-004F	236798.19	668640.72	1.09E-01	0.040	4.71E-02	+	1.48E-02	0.046	5.49E-02		5.97E-02	0.030	4.17E-02	+	0.094
9312-0004-005F	236766.74	668549.94	6.04E-01	0.073	3.67E-02	+	9.47E-02	0.034	2.99E-02	+	2.99E-02	0.024	3.69E-02	+	0.201
9312-0004-006F	236766.74	668586.25	1.10E-01	0.036	3.75E-02	+	3.61E-02	0.024	4.56E-02	+	7.71E-03	0.022	3.91E-02		0.047
9312-0004-007F	236766.74	668622.57	3.42E-02	0.032	6.10E-02	+	3.16E-02	0.040	7.40E-02		1.57E-02	0.024	4.11E-02		0.038
9312-0004-008F	236735.29	668531.78	1.99E-01	0.035	2.60E-02	+	1.26E-02	0.017	3.03E-02		3.10E-02	0.025	3.86E-02	+	0.081
9312-0004-009F	236735.29	668568.10	4.87E-02	0.051	5.94E-02		3.24E-02	0.034	6.15E-02		6.24E-02	0.031	4.33E-02	+	0.091
9312-0004-010F	236703.84	668513.62	-7.84E-03	0.031	5.12E-02		-1.23E-02	0.032	5.03E-02		5.89E-02	0.027	3.61E-02	+	0.056

RCA North of PAB Tank Farm
SURVEY UNIT 9312-0004

RELEASE RECORD
Attachment 4

Sample ID	GPS Coordinates		Cs-137				Co-60				Sr-90				Fraction of DCGL
			Result (pCi/g)	2σ	MDA (pCi/g)	Identified	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	
	North	East													
9312-0004-011F	236703.84	668549.94	2.11E-03	0.034	6.10E-02		-8.59E-03	0.043	5.91E-02		6.31E-02	0.027	3.53E-02	+	0.065
9312-0004-012F	236672.39	668495.47	8.06E-03	0.016	2.13E-02		-4.29E-04	0.013	2.20E-02		3.05E-03	0.022	4.13E-02		0.005
9312-0004-013F	236672.39	668531.78	1.41E-02	0.017	2.15E-02		6.56E-03	0.013	2.22E-02		1.83E-02	0.022	3.62E-02		0.026
9312-0004-014F	236640.94	668477.31	2.28E-01	0.038	3.80E-02	+	0.00E+00	0.046	3.08E-02		-3.31E-03	0.024	4.97E-02		0.044
9312-0004-015F	236640.94	668513.62	2.30E-02	0.015	1.60E-02	+	-1.28E-02	0.010	1.57E-02		5.67E-03	0.023	4.20E-02		0.005
9312-0004-005FS	236766.74	668549.94	7.41E-01	0.079	3.55E-02	+	8.53E-02	0.050	3.56E-02	+	6.04E-02	0.028	3.83E-02	+	0.258
9312-0004-016-I	236786.38	668570.69	2.38E-01	0.033	2.48E-02	+	3.60E+00	0.201	2.13E-01	+	3.79E-02	0.032	5.00E-02	+	1.663
9312-0004-017-I	236786.38	668570.69	1.88E-01	0.025	1.81E-02	+	2.19E-01	0.030	1.74E-02	+	-1.48E-02	0.019	4.28E-02		0.119
9312-0004-018-I	236788.42	668567.97	1.96E-01	0.031	2.49E-02	+	1.62E-02	0.020	2.32E-02		-4.54E-03	0.020	4.22E-02		0.043
9312-0004-019-I	236789.01	668572.91	7.62E-02	0.015	1.33E-02	+	1.25E-02	0.008	1.44E-02	+	8.73E-03	0.023	4.31E-02		0.031
9312-0004-020-I	236784.31	668573.59	8.09E-02	0.021	1.97E-02	+	1.41E-02	0.015	2.58E-02		-5.53E-03	0.021	4.38E-02		0.017
9312-0004-021-I	236783.75	558568.68	1.28E-01	0.016	1.22E-02	+	0.00E+00	0.012	1.19E-02		-2.46E-02	0.015	4.09E-02		0.000

OTHER RADIONUCLIDES

Sample ID	Isotope	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	DCGL _{op} (pCi/g)	Fraction of DCGL
9312-0004-002F	Cs-134	2.95E-02	0.025	4.64E-02	+	2.8E+00	0.011
9312-0004-003F	Cs-134	3.81E-02	0.036	4.32E-02	+	2.8E+00	0.014
9312-0004-006F	Mn-54	3.50E-02	0.020	3.68E-02	+	1.0E+01	0.003
9312-0004-007F	Cs-134	6.09E-02	0.052	6.69E-02	+	2.8E+00	0.022
9312-0004-007F	Mn-54	2.34E-02	0.019	4.88E-02	+	1.0E+01	0.002
9312-0004-010F	Eu-155	1.17E-01	0.113	1.23E-01	+	2.4E+02	0.000
9312-0004-011F	Eu-155	7.24E-02	0.066	1.22E-01	+	2.4E+02	0.000
9312-0004-014F	Am-241	3.56E-02	0.033	5.35E-02	+	1.6E+01	0.002
9312-0004-015F	Eu-155	4.88E-02	0.035	5.17E-02	+	2.4E+02	0.000

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

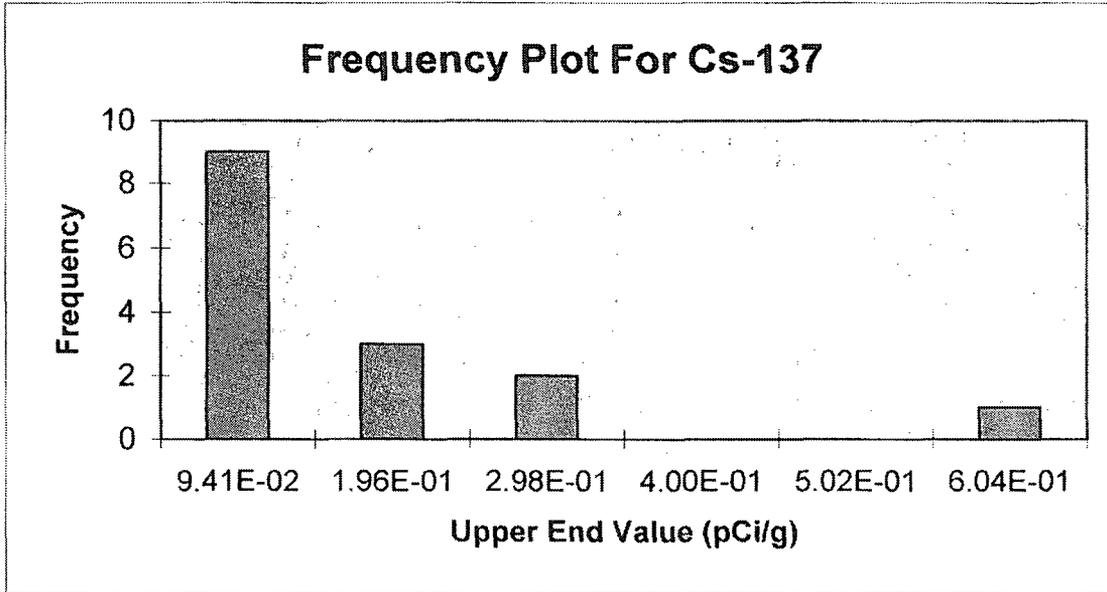
RELEASE RECORD

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

Revision 0

FREQUENCY PLOT FOR CESIUM-137

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 1.11E-01 pCi/g



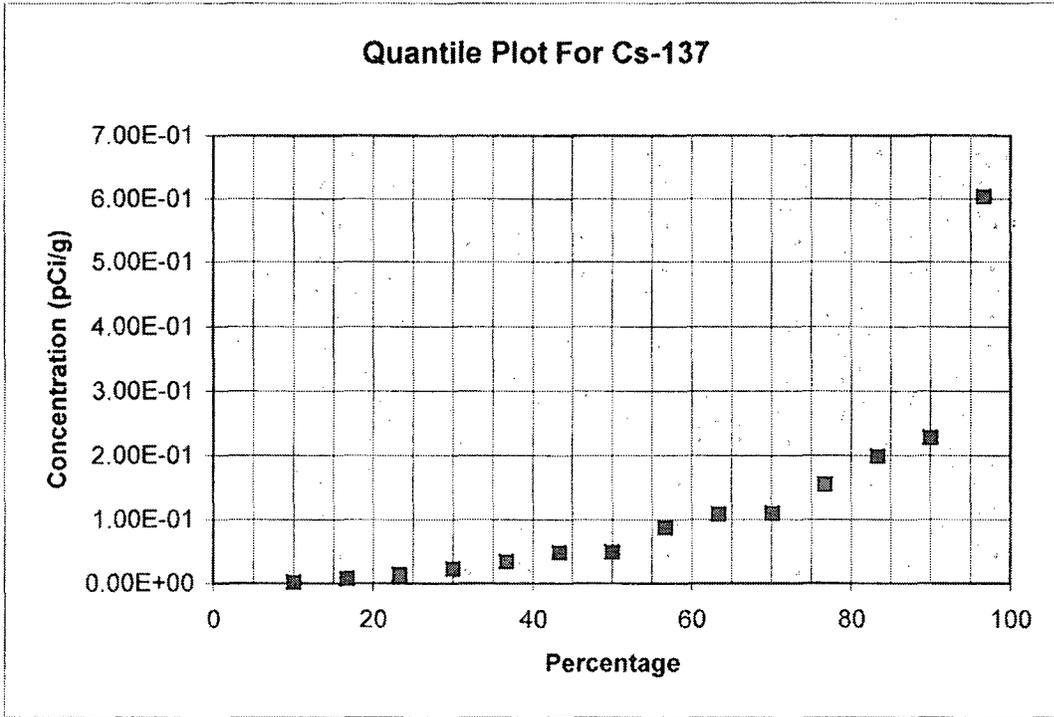
Upper End Value	Observation Frequency	Observation Frequency
9.41E-02	9	60%
1.96E-01	3	20%
2.98E-01	2	13%
4.00E-01	0	0%
5.02E-01	0	0%
6.04E-01	1	7%
Total:	15	100%

 D. WATKOWIAK 3/5/07
 Submitted by/Date

 ARTHUR L. HAMMONS 3/5/07
 Reviewed by/Date

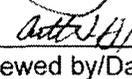
QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 1.11E-01 pCi/g



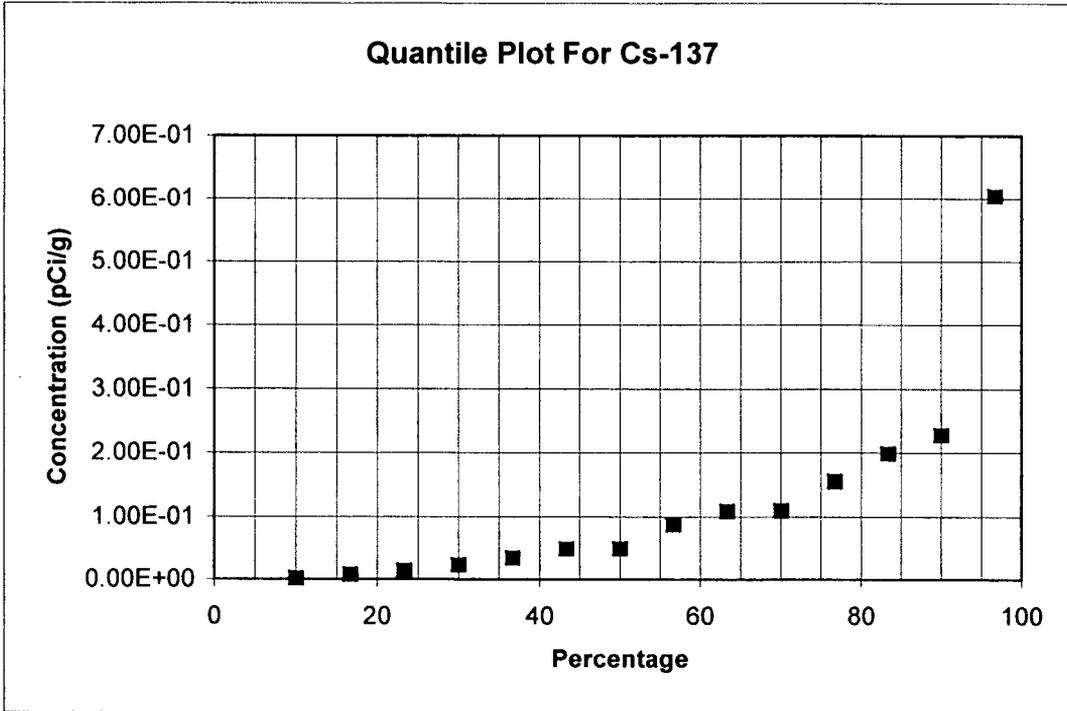
Cs-137	Rank	Percentage
-7.84E-03	1	3.3%
2.11E-03	2	10.0%
8.06E-03	3	16.7%
1.41E-02	4	23.3%
2.30E-02	5	30.0%
3.42E-02	6	36.7%
4.87E-02	7	43.3%
4.93E-02	8	50.0%
8.71E-02	9	56.7%
1.09E-01	10	63.3%
1.10E-01	11	70.0%
1.55E-01	12	76.7%
1.99E-01	13	83.3%
2.28E-01	14	90.0%
6.04E-01	15	96.7%

 D. WARKOWIAK 3/5/07
 Submitted by/Date

 ARDEN L. HAMMOND 3/5/07
 Reviewed by/Date

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 1.11E-01 pCi/g



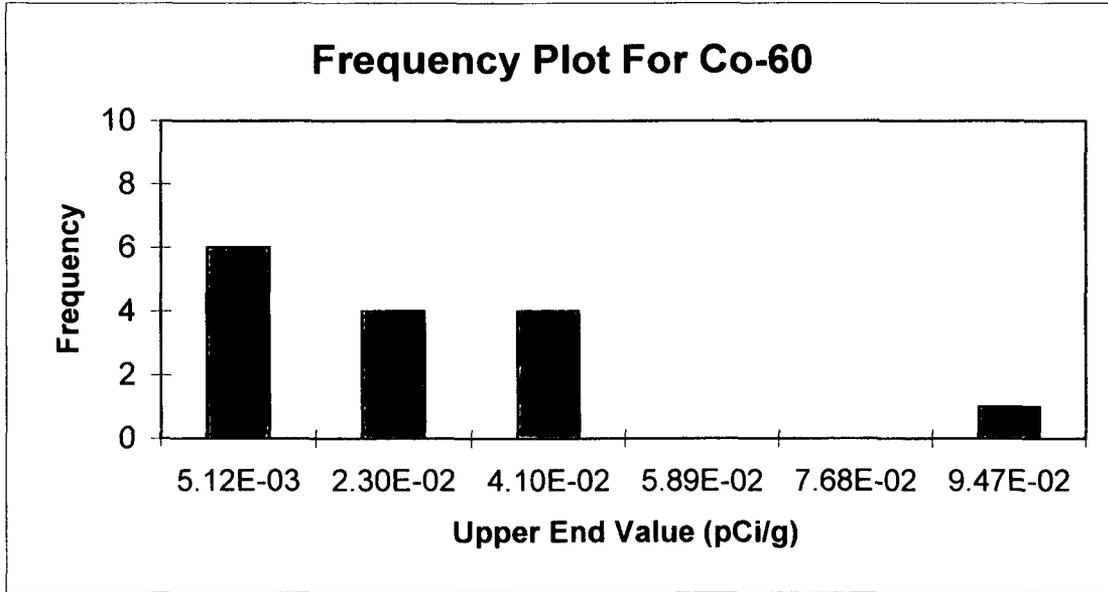
Cs-137	Rank	Percentage
-7.84E-03	1	3.3%
2.11E-03	2	10.0%
8.06E-03	3	16.7%
1.41E-02	4	23.3%
2.30E-02	5	30.0%
3.42E-02	6	36.7%
4.87E-02	7	43.3%
4.93E-02	8	50.0%
8.71E-02	9	56.7%
1.09E-01	10	63.3%
1.10E-01	11	70.0%
1.55E-01	12	76.7%
1.99E-01	13	83.3%
2.28E-01	14	90.0%
6.04E-01	15	96.7%

 D. WARKOWIAK 3/5/07
 Submitted by/Date

 ARDEN L. HAMMOND 3/5/07
 Reviewed by/Date

FREQUENCY PLOT FOR COBALT-60

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 1.55E-02 pCi/g



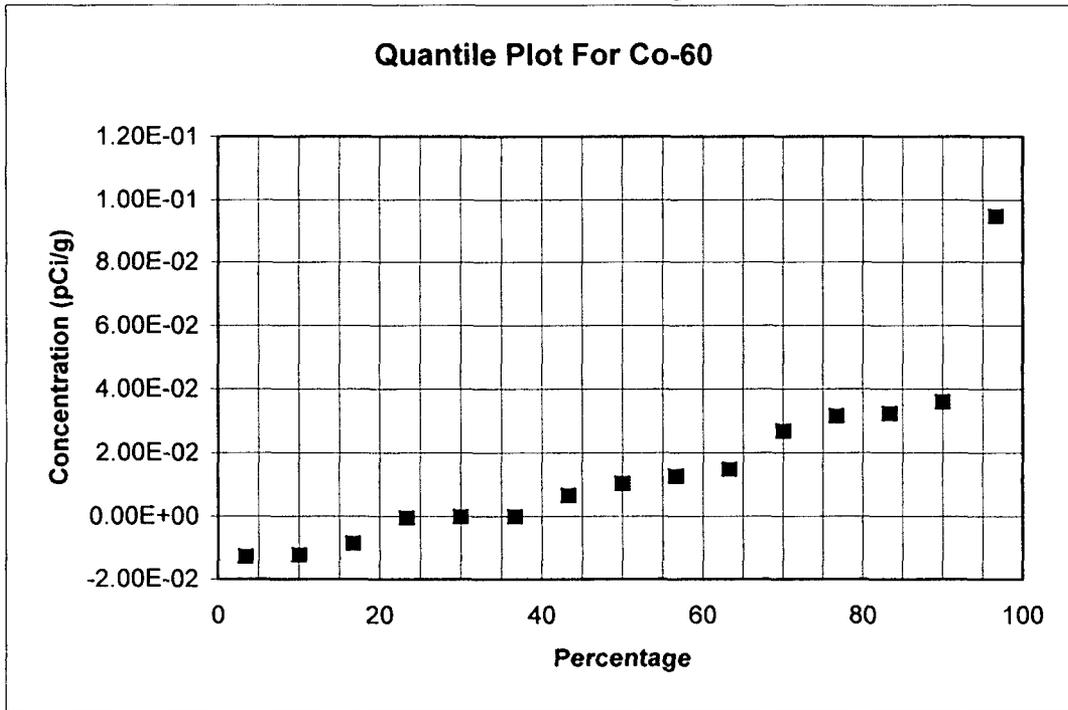
Upper End Value	Observation Frequency	Observation Frequency
5.12E-03	6	40%
2.30E-02	4	27%
4.10E-02	4	27%
5.89E-02	0	0%
7.68E-02	0	0%
9.47E-02	1	7%
Total:	15	100%

[Signature] D WALTKOWIAK 3/5/07
 Submitted by/Date

[Signature] ARTHUR L. HAMMOND 3/5/07
 Reviewed by/Date

QUANTILE PLOT FOR COBALT-60

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 1.55E-02 pCi/g



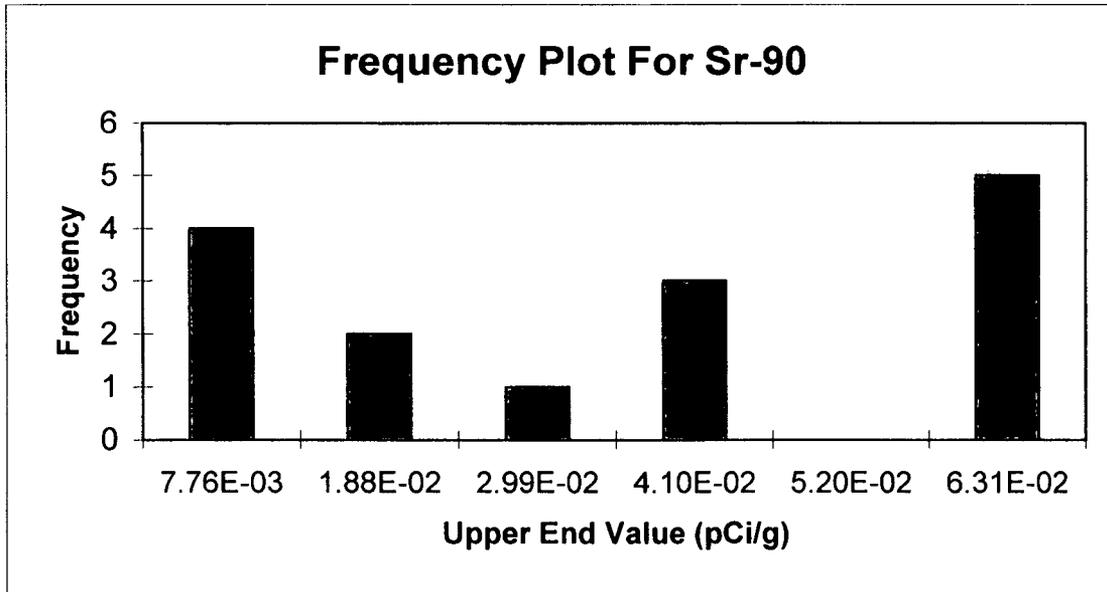
Co-60	Rank	Percentage
-1.28E-02	1	3.3%
-1.23E-02	2	10.0%
-8.59E-03	3	16.7%
-4.29E-04	4	23.3%
-3.14E-05	5	30.0%
0.00E+00	6	36.7%
6.56E-03	7	43.3%
1.03E-02	8	50.0%
1.26E-02	9	56.7%
1.48E-02	10	63.3%
2.69E-02	11	70.0%
3.16E-02	12	76.7%
3.24E-02	13	83.3%
3.61E-02	14	90.0%
9.47E-02	15	96.7%

[Signature]
 D. WATKOWIAK 3/5/07
 Submitted by/Date

[Signature]
 ARTHUR L. HAMMONS 3/5/07
 Reviewed by/Date

FREQUENCY PLOT FOR STRONTIUM-90

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 3.14E-02 pCi/g



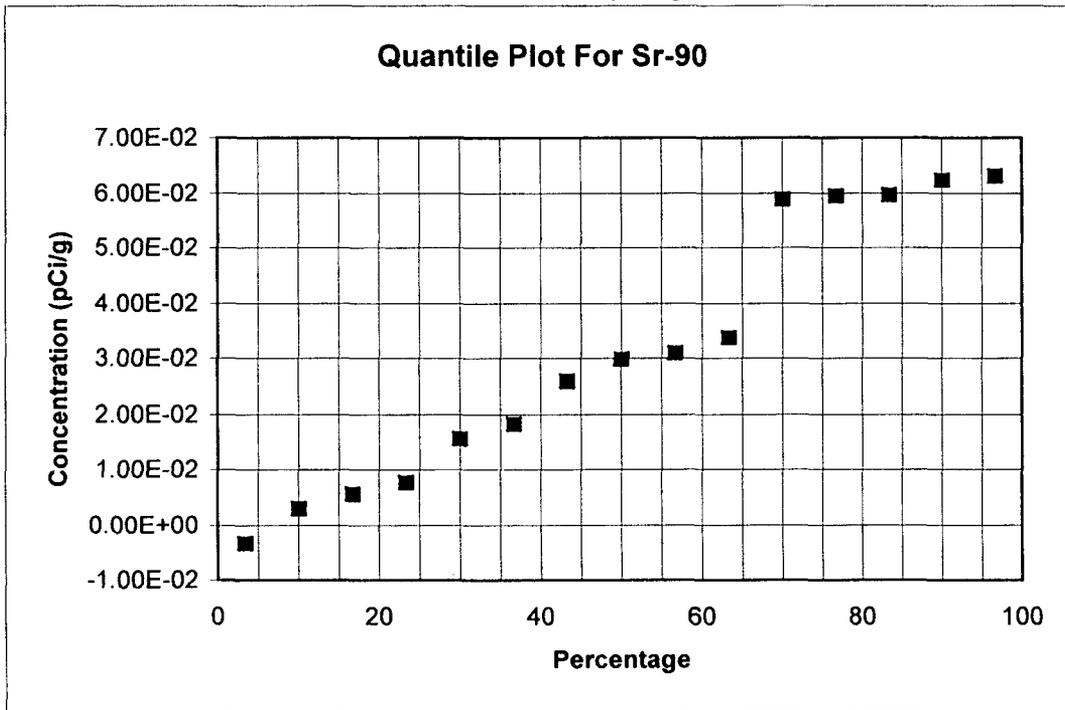
Upper End Value	Observation Frequency	Observation Frequency
7.76E-03	4	27%
1.88E-02	2	13%
2.99E-02	1	7%
4.10E-02	3	20%
5.20E-02	0	0%
6.31E-02	5	33%
Total:	15	100%

[Signature]
 Submitted by/Date: D. WATKOWIAK 3/5/07

[Signature]
 Reviewed by/Date: ARTHUR L. HAMMONS 3/5/07

QUANTILE PLOT FOR STRONTIUM-90

Survey Unit: 9312-0004
 Survey Unit Name: RCA North of PAB & Tank Farm
 Mean: 3.14E-02 pCi/g



Sr-90	Rank	Percentage
-3.31E-03	1	3.3%
3.05E-03	2	10.0%
5.67E-03	3	16.7%
7.71E-03	4	23.3%
1.57E-02	5	30.0%
1.83E-02	6	36.7%
2.60E-02	7	43.3%
2.99E-02	8	50.0%
3.10E-02	9	56.7%
3.38E-02	10	63.3%
5.89E-02	11	70.0%
5.95E-02	12	76.7%
5.97E-02	13	83.3%
6.24E-02	14	90.0%
6.31E-02	15	96.7%

 D. WASZKOWIAK 3/5/07
 Submitted by/Date

 ARTHUR L. HAMMOND 3/5/07
 Reviewed by/Date

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

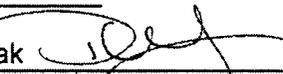
ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet for Multiple Radionuclides

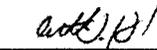
Survey Area Number: 9312		Survey Unit Number: 0004		WPIR #: N/A		
Survey Area Name: RCA North of PAB & Tank Farm		Classification: 1	TYPE I (α error): 0.05	N: 15		
Radionuclides:	1 st Radionuclide Cs-137	2 nd Radionuclide Co-60	3 rd Radionuclide Sr-90	4 th Radionuclide		
DCGL:	4.75E+00	2.29E+00	9.30E-01			
Results 1 st Radionuclide (pCi/g)	Results 2 nd Radionuclide (pCi/g)	Results 3 rd Radionuclide (pCi/g)	Results 4 th Radionuclide (pCi/g)	Weighted Sum (W _s)	1-W _s	Sign
4.93E-02	1.03E-02	2.60E-02		0.04	0.96	+1
8.71E-02	-3.14E-05	5.95E-02		0.08	0.92	+1
1.55E-01	2.69E-02	3.38E-02		0.08	0.92	+1
1.09E-01	1.48E-02	5.97E-02		0.09	0.91	+1
6.04E-01	9.47E-02	2.99E-02		0.20	0.80	+1
1.10E-01	3.61E-02	7.71E-03		0.05	0.95	+1
3.42E-02	3.16E-02	1.57E-02		0.04	0.96	+1
1.99E-01	1.26E-02	3.10E-02		0.08	0.92	+1
4.87E-02	3.24E-02	6.24E-02		0.09	0.91	+1
-7.84E-03	-1.23E-02	5.89E-02		0.06	0.94	+1
2.11E-03	-8.59E-03	6.31E-02		0.06	0.94	+1
8.06E-03	-4.29E-04	3.05E-03		0.00	1.00	+1
1.41E-02	6.56E-03	1.83E-02		0.03	0.97	+1
2.28E-01	0.00E+00	-3.31E-03		0.04	0.96	+1
2.30E-02	-1.28E-02	5.67E-03		0.01	0.99	+1
Number of positive differences (S+)						15

Critical Value 11

Survey Unit Meets the Acceptance Criteria

Performed by: David Wojtkowiak 

Date: 2/28/2007

Independent Review by:  ANTHONY L. HAMMOND

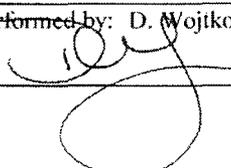
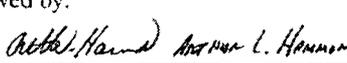
Date: 3/5/07

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

Split Sample Assessment Form

Survey Area #:	9312	Survey Unit #:	0004	Survey Unit Name: RCA North of PAB & Tank Farm															
Sample Plan or WPIR#:	N/A			SML#:	9312-0004-005														
Sample Description: Comparison of split samples collected from sample measurement location #3 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9312-0004-005F, the comparison sample was 9312-0004-005FS.																			
STANDARD				COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)											
Cs-137	6.04E-01	0.036	17	0.75 - 1.33	7.41E-01	0.393	1.23	Y											
Comments/Corrective Actions: None.					Table is provided to show acceptance criteria used to assess split samples.														
					<table style="margin-left: auto; margin-right: auto;"> <tr> <td><u>Resolution</u></td> <td><u>Agreement Range</u></td> </tr> <tr> <td>4 - 7</td> <td>0.5 - 2.0</td> </tr> <tr> <td>8 - 15</td> <td>0.6 - 1.66</td> </tr> <tr> <td>16 - 50</td> <td>0.75 - 1.33</td> </tr> <tr> <td>51 - 200</td> <td>0.80 - 1.25</td> </tr> <tr> <td>>200</td> <td>0.85 - 1.18</td> </tr> </table>			<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
<u>Resolution</u>	<u>Agreement Range</u>																		
4 - 7	0.5 - 2.0																		
8 - 15	0.6 - 1.66																		
16 - 50	0.75 - 1.33																		
51 - 200	0.80 - 1.25																		
>200	0.85 - 1.18																		
Performed by: D. Wojtkowiak	Date:	Received by:	Date:																
	2/28/2007		3/5/07																

FORMER RADIOLOGICALLY CONTROLLED AREA NORTH OF THE PRIMARY
AUXILIARY BUILDING AND TANK FARM
SURVEY UNIT 9312-0004

RELEASE RECORD

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

Revision 0



DQA Surface Soil Report

Assessment Summary

Site:	9312		
Planner(s):	Wojo		
Survey Unit Name:	9312-0004		
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:	<i>Reject Null Hypothesis (Survey Unit PASSES)</i>		

Retrospective Power Curve

