



Final Status Survey Final Report Phase VII

**Appendix A14
Survey Unit Release Record
9514-0000, West Primary Parking Lot**

May 2007



CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

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WEST PRIMARY PARKING LOT

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9514-0000 (West Primary Parking Lot) is designated as a Final Status Survey (FSS) Class 3 survey unit and consists of eighteen thousand seven hundred fifty-seven square meters (18,757 m²) or 4.635 acres of uninhabited open land located approximately five hundred and sixty-five feet (565 ft) south of the reference coordinate system benchmark used at Haddam Neck Plant (HNP).

This survey unit is bounded by Survey Units 9506-0000 and 9508-0000 to the north (called north based on the general north to south flow of the Connecticut River), Survey Unit 9514-0001 to the east, Survey Units 9302-0000 and 9313-0000 to the south and by Survey Unit 9512-0000 to the west.

The survey unit is located outside of the former Radiological Controlled Area (RCA), outside the former Industrial Area but within the Owner Controlled Area.

The survey unit is comprised of predominantly flat disturbed open land that gently slopes from east to west toward the Connecticut River.

The reference coordinates associated with this survey unit are E004 through E010 by S050 through S058 (refer to 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 historical information, scoping analyses and characterization results provided sufficient data to designate Survey Unit 9514-0000 as Class 3 in February 2007.

The "*Classification Basis Summary*" conducted for Survey Unit 9514-0000 consisted of:

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

Survey Area 9514, which consists of the Primary Parking Lot, is a surface survey area (the corresponding sub-surface Survey Area is 9803) that has historically been used to stockpile soils, asphalt spoils, snow and other materials. Containerized radioactive materials have also been stored here over the past few

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years. The historical assessment of the survey area indicated that the age of the paved area dates back to the earliest days of plant operation. The scoping report in 1997 had little information on this area, but did note that Plant Incident Report (PIR) 80-37 reported the discovery of several sources of elevated activity in March 1980, along with other areas of the site. The investigation into the incident concluded that the elevated activity was most likely due to radioactive materials ejected from the Primary Vent Stack as a result of operational events in 1979. Isotopic analysis of the particles indicated that the short-lived fission products, Ce-144 and Ru-106, dominated the particulate radioactivity. All elevated areas were removed upon detection according to supplemental reports. A review of the 10 CFR 50.75(g) files identified five (5) additional entries identifying Survey Area 9514 (Survey dated 6/11/79; Contract, drawings and Spec. work logs from 10/11/82; Email from GTS Duratek dated 1/26/99; memo HP-99-111; memo HP-99-113); however, these sources did not provide a significant amount of additional information for characterization of Survey Area 9514. Additionally, Warehouse #2 and the Office Building #3/PAP were constructed in 1989 and the primary parking lot was re-configured. The primary parking lot was enlarged, re-paved and storm drains installed. Scanning of the parking lot was conducted on September 17-25, 1997 using a floor monitor. No elevated areas of activity were identified. Soil samples were taken of a proposed sanitary sewer sump location just west of the Security Building Primary Access Point (PAP). No plant related radioactivity was identified in these samples. Areas behind the Building Maintenance Equipment Warehouse and the Chemical Storage Warehouse were also used as storage areas for radioactive materials returned to site as a result of the Offsite Materials Recovery Program.

A storm drain system was installed under the parking area. The storm drain system's purpose was to conduct runoff water from the parking lot, including the northern-most side of Survey Area 9313 (adjacent to the office building and warehouses), and the west hillside primarily to the retention pond. Outfalls from the storm drain system discharge to the southeast and southwest banks of the pond (Survey Area 9508). Overflow from the retention pond discharges to the west bank of the Connecticut River (Survey Area 9512).

Recent decommissioning activities included the removal of asphalt, concrete and sub-surface commodities such as storm drain and sewer system piping. Two (2) potential pathways for residual contamination to exist within this survey area are from the mixing of surface soils with paving materials during demolition or from storm drain pipe leakage.

After remediation was complete in Survey Area 9514, characterization samples were collected and analyzed in accordance with Survey and Sampling Work Plan (SSWP) 06-09-001. Evaluation of soil samples collected for the SSWP provided the information with regard to the radionuclides of concern within Survey Area 9514. These results are summarized in Table 1.

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Table 1- Basic statistical quantities from SSWP 06-09-001 Radiological Assessment survey

Parameter	Cs-137 ($\mu\text{Ci/g}$)	Co-60 ($\mu\text{Ci/g}$)	Sr-90 ($\mu\text{Ci/g}$)
Operational DCGL:	5.38E+00	2.59E+00	1.05E+00
Minimum Value:	-9.68E-03	-3.21E-02	5.67E-03
Maximum Value:	8.44E-01	9.36E-02	7.39E-02
Mean:	9.22E-02	4.87E-03	3.43E-02
Median:	3.06E-02	3.16E-03	2.95E-02
Standard Deviation:	2.06E-01	2.64E-02	2.18E-02

Characterization sample data indicated that several locations in the eastern portion of Survey Area 9514 contained elevated amounts of Sr-90 at levels up to seven percent (7%) of the Operational Derived Concentration Guideline Level (DCGL) for Sr-90.

Toward the end of 2006, a small section of Survey Unit 9506-0000 was disturbed by grading operations. Rather than performing the FSS on Survey Unit 9506-0000 a small area to the south of the retention pond was added to Survey Area 9514 and FSS was performed on the newly formed survey area.

Based on the characterization results provided in Table 1, Survey Area 9514 was split into two (2) survey units. Survey Unit 9514-0001 is a Class 2 survey unit which consists of open land and comprises the eastern portion of the former primary parking lot. The western portion of the former primary parking lot is covered by Survey Unit 9514-0000, a Class 3 survey unit (the survey unit covered by this Release Record).

The characterization results for Survey Unit 9514-0000 indicate that Cs-137 and Co-60 are the radionuclides of concern for this survey unit. HTD radionuclide analysis indicated that Sr-90 was positively identified (a result greater than two (2) standard deviations error) in five (5) samples in the eastern portion of Survey Area 9514, which later became Survey Unit 9514-0001, a Class 2 survey unit. Therefore, Sr-90 was also selected as a radionuclide of concern. Only one (1) other HTD radionuclide, Curium-243/244 (Cm-243/244), was identified but was de-selected as a potential radionuclide of concern because it was not present at a concentration above 5% of the Operational DCGL for soil individually or 10% of the Operational DCGL for soil as a composite.

The FSS Engineer performed a visual inspection and walk-down during February 2007 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions.

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

Based upon the historical information and the results of radiological surveys performed during characterization, it was concluded that there was a low probability for residual radioactivity to be present in this survey unit in concentrations greater than the Operational DCGLs justifying a final survey unit classification of Class 3 (refer to Section 3).

3. DATA QUALITY OBJECTIVES (DQO)

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

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would indicate that residual activity within the survey unit does not exceed the release criteria. Therefore, the survey unit does satisfy the primary objective of the Final Status Survey Plan (FSSP). Probabilistic sampling is a preferred method to select a sample so that each item in the population being studied has a known likelihood of being included in the sample. Probabilistic sampling may include simple random sampling where every sample has the same chance of being included, or systematic random sampling where samples are arranged in some order and a random starting point is selected.

The primary objective of the FSSP was to demonstrate that the level of residual radioactivity in Survey Unit 9514-0000 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of DCGLs. The DCGLs represent average levels of radioactivity above background levels and are presented in terms of surface or mass activity concentrations. Chapter 6 of the LTP describes in detail the modeling used to develop the DCGLs for soil (called Base Case Soil DCGL), existing groundwater radioactivity and future groundwater radioactivity that will be contributed by building basements and footings.

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

Equation 1

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

The total dose under the LTP criteria is twenty-five (25) mrem/yr TEDE from all three (3) components. The allowable total dose under the Connecticut Department of Environmental Protection (CTDEP) radiological remediation standard for CY is nineteen (19) mrem/yr TEDE. To satisfy both the LTP and CY CTDEP criteria, the dose from soil must be reduced when using the existing and future groundwater dose values discussed above.

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

Equation 2

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

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

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

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pCi/g) ⁽²⁾	Operational DCGL (pCi/g) ⁽³⁾	Required MDC (pCi/g) ⁽⁴⁾
H-3	4.12E+02	2.81E+02	1.65E+01
C-14	5.66E+00	3.84E+00	2.26E-01
Mn-54	1.74E+01	1.18E+01	6.96E-01
Fe-55	2.74E+04	1.87E+04	1.10E+03
Co-60	3.81E+00	2.59E+00	1.52E-01
Ni-63	7.23E+02	4.91E+02	2.89E+01
Sr-90	1.55E+00	1.05E+00	6.20E-02
Nb-94	7.12E+00	4.85E+00	2.85E-01
Tc-99	1.26E+01	8.57E+00	5.04E-01
Ag-108m	7.14E+00	4.86E+00	2.86E-01
Cs-134	4.67E+00	3.18E+00	1.87E-01
Cs-137	7.91E+00	5.38E+00	3.16E-01
Eu-152	1.01E+01	6.87E+00	4.04E-01
Eu-154	9.29E+00	6.32E+00	3.72E-01
Eu-155	3.92E+02	2.67E+02	1.57E+01
Pu-238	2.96E+01	2.01E+01	1.18E+00
Pu-239/240	2.67E+01	1.82E+01	1.07E+00
Pu-241	8.70E+02	5.92E+02	3.48E+01
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00
Cm-243/244	2.90E+01	1.97E+01	1.16E+00

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

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

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

(4) The required MDC is equivalent to one (1) mrem/yr TEDE.

(5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed.

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Fifteen (15) samples were collected and analyzed during characterization, as discussed in Section 2.

The mean and variability of Cs-137, Co-60 and Sr-90 in soil in this survey unit was determined during characterization 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

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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 FSSP uses an integrated sample design that combines scanning surveys and sampling which can be either random or biased.

Characterization sampling was used to determine concentration variability.

The DQO process determined that Cs-137, Co-60 and Sr-90 would be the radionuclides of concern in survey unit 9514-0000 (refer to Section 3). The sum of fractions or unity rule was used with the individual Operational DCGLs because multiple radionuclides (Cs-137, Co-60 and Sr-90) are considered in the survey design. Other radionuclides identified during FSS were evaluated to ensure adequate survey design.

Surrogate DCGLs were not required for this survey unit based on process knowledge from FSS of nearby adjacent areas and via screening under LTP Section 5.4.7.2, "Gross Activity DCGLs". 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.

The Elevated Measurement Comparison (EMC) did not apply to this survey unit since it is a Class 3 area and discrete, elevated areas of contamination were not expected.

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

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "Determination of the Number of Surface Samples for Final Status Survey." The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 0.91 to maintain the 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

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developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10 CFR 20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. Survey design specified fifteen (15) surface soil samples for non-parametric statistical testing.

The sampling 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 random sampling pattern was selected for sample design, which is appropriate for a Class 3 area.

Judgmental sampling was included as a feature of this survey design to investigate suspect areas and account for any anomalies identified in the field.

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 Global Positioning System (GPS) to locate sample points in the field. Sample Measurement Locations for the design are listed with the GPS coordinates in Table 3.

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Table 3 -Sample Measurement Locations identified for Non-parametric Statistical Testing with their Associated GPS Coordinates

Designation ⁽¹⁾	Northing	Easting
9514-0000-001F	236741.85	667927.36
9514-0000-002F	237003.25	667873.14
9514-0000-003F	237085.45	667945.93
9514-0000-004F	236983.70	668065.43
9514-0000-005F	237019.53	668113.40
9514-0000-006F	236767.82	668303.42
9514-0000-007F	236748.52	668164.06
9514-0000-008F	236824.04	668034.55
9514-0000-009F	236844.16	668132.20
9514-0000-010F	237039.56	667907.90
9514-0000-011F	236802.66	668316.63
9514-0000-012F	236719.09	668072.91
9514-0000-013F	236719.44	668148.57
9514-0000-014F/FS	236883.83	667854.95
9514-0000-015F/FS	236883.46	667825.50
9514-0000-016J ⁽²⁾	236892.29	667921.64
9514-0000-017J ⁽²⁾	236870.09	668002.62
9514-0000-018J ⁽²⁾	236794.48	668068.12
9514-0000-019B ⁽³⁾	Scan Area #4, Grid #01	

⁽¹⁾ "F" denotes Final Status Survey sample location, "FS" denotes Field-Split sample, "J" denotes Judgmental sample and "B" denotes Investigative sample location.

⁽²⁾ Denotes samples collected to support addendum #1 to the FSSP.

⁽³⁾ Denotes investigative sample location at elevated gamma scan location identified during support of addendum #1 to the FSSP.

Although Procedure RPM 5.1-11 only specified that 5% of the samples are required to be selected for HTD analysis, two (2) soil samples or 13% of the number of samples that would be used for non-parametric statistical testing were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RANDBETWEEN" function. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in the LTP, Table 2-12, "Radionuclides Potentially Present at Haddam Neck Plant" and as provided in Table 2.

The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey," included the collection of two (2) soil samples for "split sample" analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel "RANDBETWEEN" function. The number of quality control soil samples was determined to be 13% of fifteen (15) samples.

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The LTP does not require a specific scanning coverage for Class 3 survey units. The fraction of scanning coverage is determined during the DQO process with the total area, and location(s) based on the likelihood of finding elevated activity during FSS. Survey data collected to date indicates a low probability of finding areas of elevated activity. Nevertheless, the identification of discrete sources of elevated activity in 1980 justifies some scan coverage.

Based on the historical site assessment and the characterization data available, it was determined that three (3) original scan areas were established. The total surface area to be scanned was approximately 10% of the survey unit. Additionally, Addendum #1 to the FSSP established the need for a fourth scan area under the “8-plex” trailer complex on the asphalt that was to remain after license termination. A map of the scan grid locations is provided in Attachment 1.

For this Class 3 survey unit, the “Investigation Level” for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8. Table 4 provides a synopsis of the survey design.

Table 4 – Synopsis of the Survey Design⁽¹⁾

Feature	Design Criteria	Basis
Survey Unit Land Area	18,757 m ²	Based on AutoCAD-LT and Visual Sample Plan calculations
Number of Measurements	15 random (in addition to 3 biased and 1 investigative)	Type 1 and Type 2 errors were 0.05, sigma was 0.04 pCi/g, and the LBGR was adjusted to 0.91 to maintain Relative Shift in the range of 1 and 3.
Operational DCGL	5.38 pCi/g Cs-137 2.59 pCi/g Co-60 1.05 pCi/g Sr-90	Administratively set to achieve seventeen (17) mrem/yr TEDE ⁽²⁾
Soil Investigation Level	5.38 pCi/g Cs-137 2.59 pCi/g Co-60 1.05 pCi/g Sr-90	The Operational DCGL meets the LTP criteria for a Class 3 survey unit
Scan Survey Area Coverage	Approximately 10% of the area. Addendum #1 to the FSSP required 25% of the surface area of asphalt that is to remain, to be scanned.	The LTP does not require any scanning coverage for Class 3 Survey Units.
Scan Investigation Level	Detectable over background	Administratively set to achieve seventeen (17) mrem/yr TEDE ⁽²⁾

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

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

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5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under a detailed FSSP 9514-0000 that included the implementation of a job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

Three (3) original scan areas were established that constituted approximately 10% of the surface area of Survey Unit 9514-0000. Grid lines, one (1) meter wide, were painted on the ground of each of the three (3) scan areas. A background survey was performed around the survey unit and it was determined that the range of background measurements, using a Eberline E-600 with a SPA-3 sodium iodide detector, was varied from 4,410 counts per minute (cpm) to 7,550.

As previously stated, Addendum #1 to the FSSP established the need for a fourth scan area under the "8-plex" trailer complex on the asphalt that was to remain after license termination. A map of the scan grid locations is provided in Attachment 1.

The scan areas were established and each area was scanned for elevated readings (see Attachment 2 for all scan results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 10% of the survey unit was scanned.

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

As part of the survey design, several additional alternate sample locations were selected randomly, as determined by using Visual Sample Plan (VSP), in accordance with Procedure RPM 5.1-14, "Identifying, and Marking Surface Sample Locations for Final Status Survey."

Fifteen (15) surface soil samples were collected for non-parametric statistical testing 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."

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Two (2) samples (9514-0000-009F and 9514-0000-010F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of two (2) samples (9514-0000-014F and 9514-0000-015F) for "split sample" analysis.

Follow-up sampling was conducted at the one (1) elevated measurement location that was identified.

Three (3) judgmental sample locations were collected based on the requirements identified in Addendum #1 to the FSS plan, by the FSS Engineer.

A map identifying all of the sample locations is provided in Attachment 1.

6. SURVEY RESULTS

All field survey activities were conducted from February 27 to April 10, 2007.

On February 27, 2007, three (3) original scan areas, that comprised approximately 10% of the total surface area for the survey unit, were scanned for elevated radiation levels.

Additionally, on April 10, 2007, Addendum #1 to the FSSP required that approximately 25% of the surface area of asphalt remaining at the location of the former "8-plex" should also be scanned.

One (1) elevated measurement location was identified during scanning. An investigative sample was collected at the location of the elevated measurement. Table 5 provides an overview of the scan area survey. Attachment 1 contains a map that identifies the locations of the three (3) scan grids and the additional asphalt area. All scan results are provided in Attachment 2.

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Table 5-Scan Area Results						
Scan Area	Grid #'s	Highest Logged Reading (kcpm)	Range of Action Levels (kcpm) ⁽¹⁾	> Action Level	Elevated Reading Identification ⁽²⁾	Investigation Sample ⁽²⁾
1	1-5	5.87	6.06-6.90	NO	-	-
2	1-5	6.80	7.24-7.38	NO	-	-
	6-10	6.32	6.27-7.34	NO	-	-
	11-12	5.55	6.66-6.87	NO	-	-
3	1-5	7.73	7.69-8.47	NO	-	-
	6-10	6.70	6.34-8.01	NO	-	-
	11-15	7.28	5.36-7.71	NO	-	-
	16-17	5.70	6.50-7.60	NO	-	-
4 ⁽³⁾	1-4	12.3	6.78	YES	9514-00-ER-4-1-01	9514-0000-019B
	5-8	5.69-<6.67	6.67	NO	-	-
	9-12	5.78-<6.78	6.78	NO	-	-
	13-16	5.49-<6.45	6.45	NO	-	-

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

⁽²⁾ "ER" denotes Elevated Reading, "B" denotes Investigative sample location and "-" denotes no value for that field.

⁽³⁾ Scan area #4 was established to comply with the scan requirements identified in Addendum #1 of the FSSP which required that approximately 25% of the asphalt, under the "8-plex" trailer complex, would be scanned. Therefore sixteen grids were established on the asphalt that was to remain and every fourth grid, or four (4) of the sixteen (16) total grids were scanned, or 25%.

On February 28, 2007 fourteen (14) of the fifteen (15) samples identified for non-parametric statistical testing were collected. One (1) of the original fifteen (15) samples, sample number 9514-0000-008F, was located under the "8-plex" trailer complex and collected on April 10, 2007 after the complex was removed.

Additionally, on April 10, 2007, three (3) judgmental samples and one (1) investigative sample were collected from the soil beneath the asphalt, per Addendum #1 to the FSSP. The samples were designated as 9514-0000-016J, 9514-0000-017J, 9514-0000-018J and 9514-0000-019B.

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Material Service Requisition (MSR) numbers 07-00103 and 07-00144 were generated to cover the analysis of the samples at the approved off-site laboratory.

The fifteen (15) sample locations identified for non-parametric statistical testing along with the three (3) judgmental samples and the one (1) investigative sample locations were scanned over approximately a one (1) meter radius for elevated radiation levels, in accordance with the FSSP. Table 6 provides an overview of the scan results for sample measurement locations.

A map identifying all of the sample locations is provided in Attachment 1.

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Table 6- Scan Results for Sample Measurement Locations

Sample Measurement Location ⁽¹⁾	Highest Logged Reading (kcpm)	Action Level ⁽²⁾ (kcpm)	> Action Level ⁽³⁾
9514-0000-001F	5.68	6.48	NO
9514-0000-002F	6.11	7.61	NO
9514-0000-003F	5.85	6.48	NO
9514-0000-004F	6.21	6.99	NO
9514-0000-005F	6.49	7.32	NO
6514-0000-006F	7.42	8.15	NO
9514-0000-007F	7.10	7.96	NO
9514-0000-008F	5.35	6.48	NO
9514-0000-009F	7.24	7.65	NO
9514-0000-010F	5.70	8.13	NO
9514-0000-011F	7.53	9.26	NO
9514-0000-012F	6.96	7.50	NO
9514-0000-013F	6.43	7.67	NO
9514-0000-014F	6.61	7.91	NO
9514-0000-015F	6.87	7.24	NO
9514-0000-016J	5.66	6.78	NO
9514-0000-017J	6.78	7.87	NO
9514-0000-018J	6.26	7.43	NO

(1) "F" denotes Final Status Survey sample location and "J" denotes Judgmental or Biased sample location.

(2) The action level is based on a measurement above ambient background in accordance with the FSSP.

(3) FSS sample plans require movement of the sample measurement location to the area within the one (1) meter radius yielding the response above the action level

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC, Charleston, South Carolina. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing, the associated duplicates, the three (3) judgmental samples and one (1) investigative samples 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).

Cs-137 was identified in seven (7) of the fifteen (15) samples collected for non-parametric statistical testing. Co-60 was not identified in any of the fifteen (15) samples collected for non-parametric statistical testing. Sr-90 was identified in two (2) of the fifteen (15) samples collected for non-parametric statistical testing. The mean of the gamma spectroscopic analysis results for the samples indicated that Cs-137 was present at levels that are similar to the concentrations

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of Cs-137 found in soil at off-site locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063.

A summary of the fifteen (15) samples collected for non-parametric statistical testing results is provided in Table 7.

Table 7- Summary of Soil Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g	Fraction of the Operational DCGL ⁽¹⁾⁽²⁾
9514-0000-001F	4.22E-02	1.17E-02	7.52E-03	0.020
9514-0000-002F	2.51E-02	1.40E-02	9.72E-03	0.019
9514-0000-003F	1.83E-02	6.70E-03	4.68E-03	0.010
9514-0000-004F	2.57E-02	4.04E-03	3.59E-02	0.041
9514-0000-005F	2.59E-02	-5.42E-03	5.20E-03	0.010
9514-0000-006F	7.25E-02	-9.79E-03	7.99E-05	0.014
9514-0000-007F	2.29E-02	-3.77E-03	3.04E-02	0.033
9514-0000-008F	-1.73E-03	-5.12E-04	-1.46E-02	0.000
9514-0000-009F	6.27E-03	2.24E-04	4.71E-03	0.006
9514-0000-010F	1.41E-02	1.31E-02	-2.34E-03	0.008
9514-0000-011F	4.48E-02	8.17E-03	9.49E-03	0.021
9514-0000-012F	2.29E-02	2.10E-02	-9.25E-03	0.012
9514-0000-013F	-9.25E-03	-1.30E-02	2.76E-03	0.001
9514-0000-014F	9.54E-02	2.50E-02	9.02E-03	0.036
9514-0000-015F	3.26E-03	2.04E-02	1.70E-02	0.025

⁽¹⁾ The Operational DCGLs are 5.38 pCi/g for Cs-137, 2.59 pCi/g for Co-60 and 1.05 pCi/g for Sr-90 from Table 2 and are used in conjunction with the unity rule.

⁽²⁾ Negative values were not used when determining the fraction of the Operational DCGL.

The off-site laboratory also processed two (2) samples for HTD analysis (other than Sr-90 which was analyzed for in each sample) as required by the sample plan. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC. One (1) sample, 9514-0000-009F, met the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty) for tritium. No other HTD radionuclides, other than Sr-90, met the accepted criteria for detection. Additionally, all HTD radionuclide, other than Sr-90, met the criteria for de-selection of a radionuclide is a concentration that is less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the Operational DCGLs for aggregates.

7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Two (2) samples or thirteen percent (13%), of the fifteen

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(15) total samples collected for non-parametric statistical testing were selected for split sample 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."

Split samples 9514-0000-014F/FS were assessed and it was determined that there were low resolution ratios (<4) for both Cs-137 and Co-60. The agreement range could not be established because NRC Inspection Procedure 84750 does not address resolution ratios below 4. Therefore, a determination of the acceptability for such low ratios cannot be made. However, Potassium-40 (K-40) was found to be present at an acceptable level of agreement. Therefore, no further action was warranted.

Split samples 9514-0000-015F/FS were assessed and it was determined that there were low resolution ratios (<4) for both Cs-137 and Co-60. The agreement range could not be established because NRC Inspection Procedure 84750 does not address resolution ratios below 4. Therefore, a determination of the acceptability for such low ratios cannot be made. However, Potassium-40 (K-40) was found to be present at an acceptable level of agreement. Therefore, no further action was warranted.

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

8. INVESTIGATIONS AND RESULTS

A total of three (3) judgmental sampling locations from the soil beneath the asphalt were collected and analyzed for the radionuclides of concern identified in the FSSP. The locations were selected randomly by VSP.

One (1) investigative sample was collected at a elevated scan location identified within the area identified for supplemental scanning in Addendum #1 to the FSSP.

Gamma spectroscopy and Sr-90 analyses was performed by the off-site laboratory to the required MDC. None of the samples exceeded 6.2% of the Operational DCGL. No further action or investigations were required (see Table 8).

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Table 8- Judgmental and Investigative Sample Results

Sample Number ⁽¹⁾	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g	Fraction of the Operational DCGL ⁽²⁾⁽³⁾
9514-0000-016J	-6.62E-03	1.54E-02	-1.15E-02	0.006
9514-0000-017J	7.34E-03	1.50E-02	5.73E-02	0.062
9514-0000-018J	-4.17E-03	-2.37E-03	1.79E-02	0.016
9514-0000-019B	-1.38E-02	2.18E-02	4.84E-02	0.055

⁽¹⁾ "F" denotes Final Status Survey sample, "J" denotes Judgmental sample and "B" denotes Investigative sample location.

⁽²⁾ The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137, 2.59 pCi/g for Co-60, 1.05 pCi/g for Sr-90 and are used in conjunction with the unity rule.

⁽³⁾ Negative values were not used when determining the fraction of the Operational DCGL.

9. REMEDIATION AND RESULTS

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

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

Sample location number 9514-0000-008F was initially not accessible due to the location of the "8 plex" trailer complex and was able to be collected only after the trailer complex was removed.

Addendum #1 to the FSSP was written to address the decision to leave the portion of the asphalt that was located under the "8 plex" trailer complex. Based on the requirements provided in Section 5.7.3.2.3 of the LTP which states that the portion of the paved area that remains were surveyed for radioactivity both on the surface and beneath the surface, a fourth scan area and three (3) judgmental sampling locations for the soil beneath the asphalt were collected and analyzed for the radionuclides of concern identified in the FSSP.

No other changes to the FSSP were made.

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.

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Documentation was complete and legible. Surveys and sample collection were consistent with the DQOs and were sufficient to ensure that the survey unit was properly designated as Class 3.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The standard deviation was slightly less than the value used for the survey design. This would indicate that the number of samples collected was sufficient to meet the Operational DCGL. The mean and median values are well below the Operational DCGL when used in conjunction with the unity rule. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs.

For Cs-137, the range of the data, about four (4) standard deviations, was not a particularly large variation considering that the levels were essentially at existing environmental levels where such variation is to be expected. The difference between the mean and median was 16% 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 positive skewness as confirmed by the calculated skew of 1.24.

Since Co-60 was not identified (i.e., a result greater than two (2) standard deviations uncertainty) in any of the fifteen (15) samples collected for non-parametric statistical testing, the data was not used to determine the adequacy of statistical testing for this survey unit.

For Sr-90, the range of the data, about four (4) standard deviations, was not a particularly large variation considering that the levels were at extremely low levels where such variation is to be expected. The difference between the mean and median was 16.5% of the standard deviation which indicates a small skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot shows a slightly positive skew as confirmed by the calculated skew of 0.73.

All data, assessments, and graphical representations are provided in Attachment 3 and Attachment 4.

12. ANOMALIES

The anomalies associated with the disagreement between the field splits was presented in Section 7. The source of the disagreement for Cs-137 and Co-60 is likely due to extremely low levels of activity being reported and the statistical uncertainties associated with the comparison of very small numbers. Standard statistical tests, ratio comparisons and skew, may not provide the same information at extremely low numbers as compared to higher numbers.

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No other anomalies were noted.

13. CONCLUSION

Survey Unit 9514-0000 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

Cs-137 and Sr-90 were used for statistical testing to determine the adequacy of the survey unit for FSS.

The sample data passed the Sign Test. The null hypothesis was rejected. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit is properly designated as Class 3.

The dose contribution from soil is 0.25 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 two (2) mrem/yr TEDE.

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

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 2.25 mrem/yr Total Effective Dose Equivalent (TEDE). Therefore, Survey Unit 9514-0000 is acceptable for unrestricted release.

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14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

14.4 Attachment 4 – DQA Results

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ATTACHMENT 1 (FIGURES)

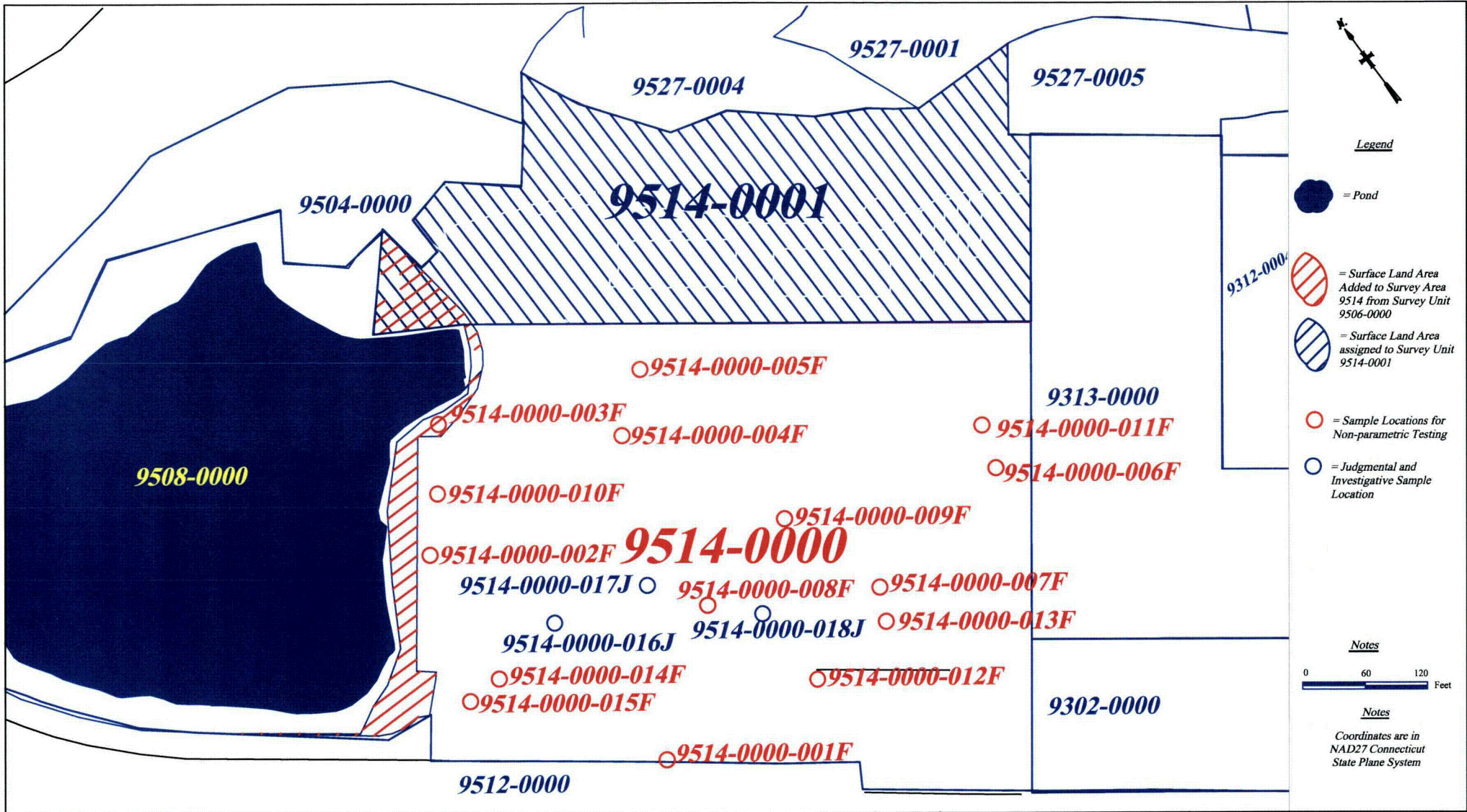


Figure 1

Connecticut Yankee Atomic Power Company
 Sample Location Map for Survey Unit 9514-0000

April 2007

Revision: 0

Created by: R. Massengill

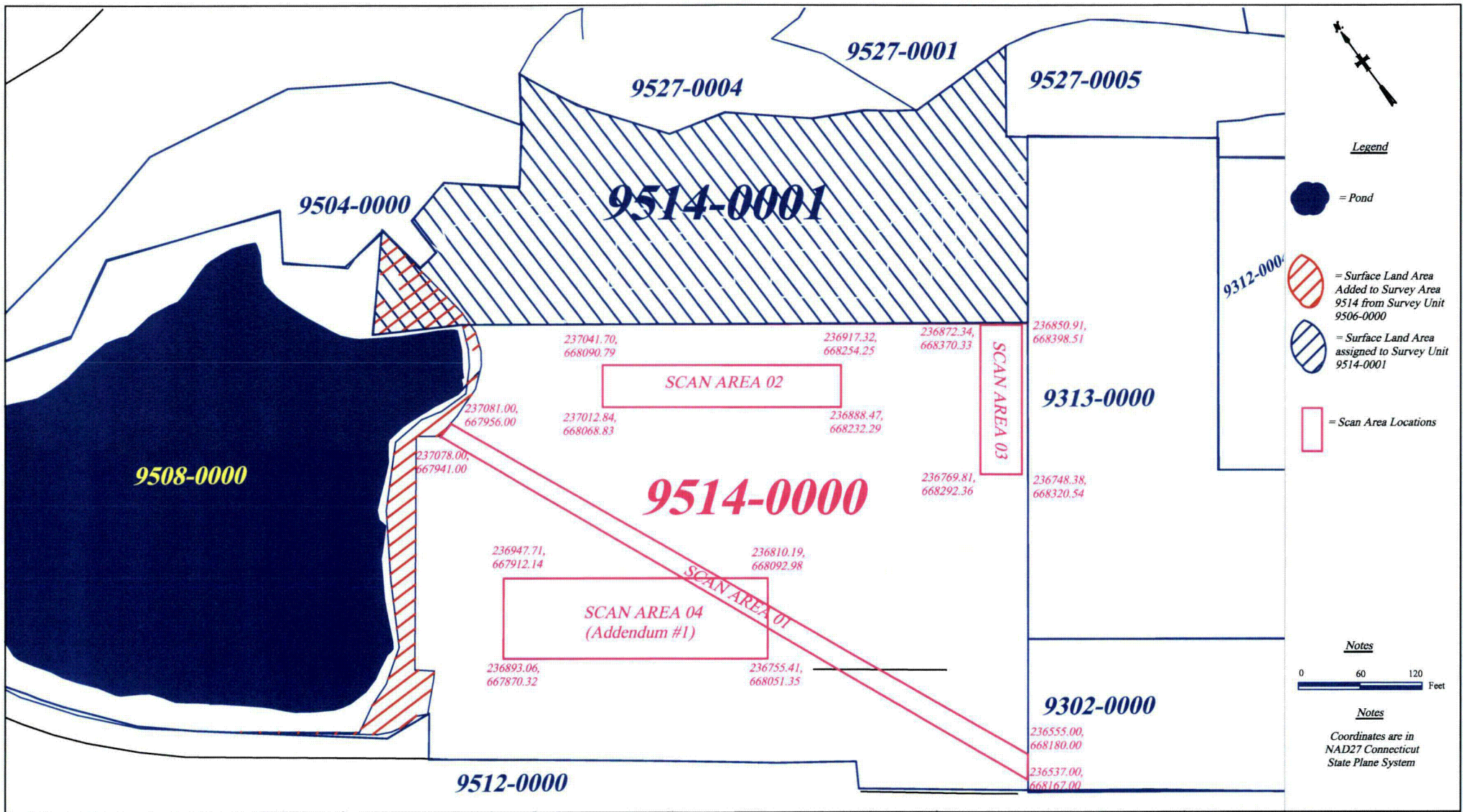


Figure 2

Connecticut Yankee Atomic Power Company
Scan Area Locations for Survey Unit 9514-0000

April 2007

Revision: 0

Created by: R. Massengill

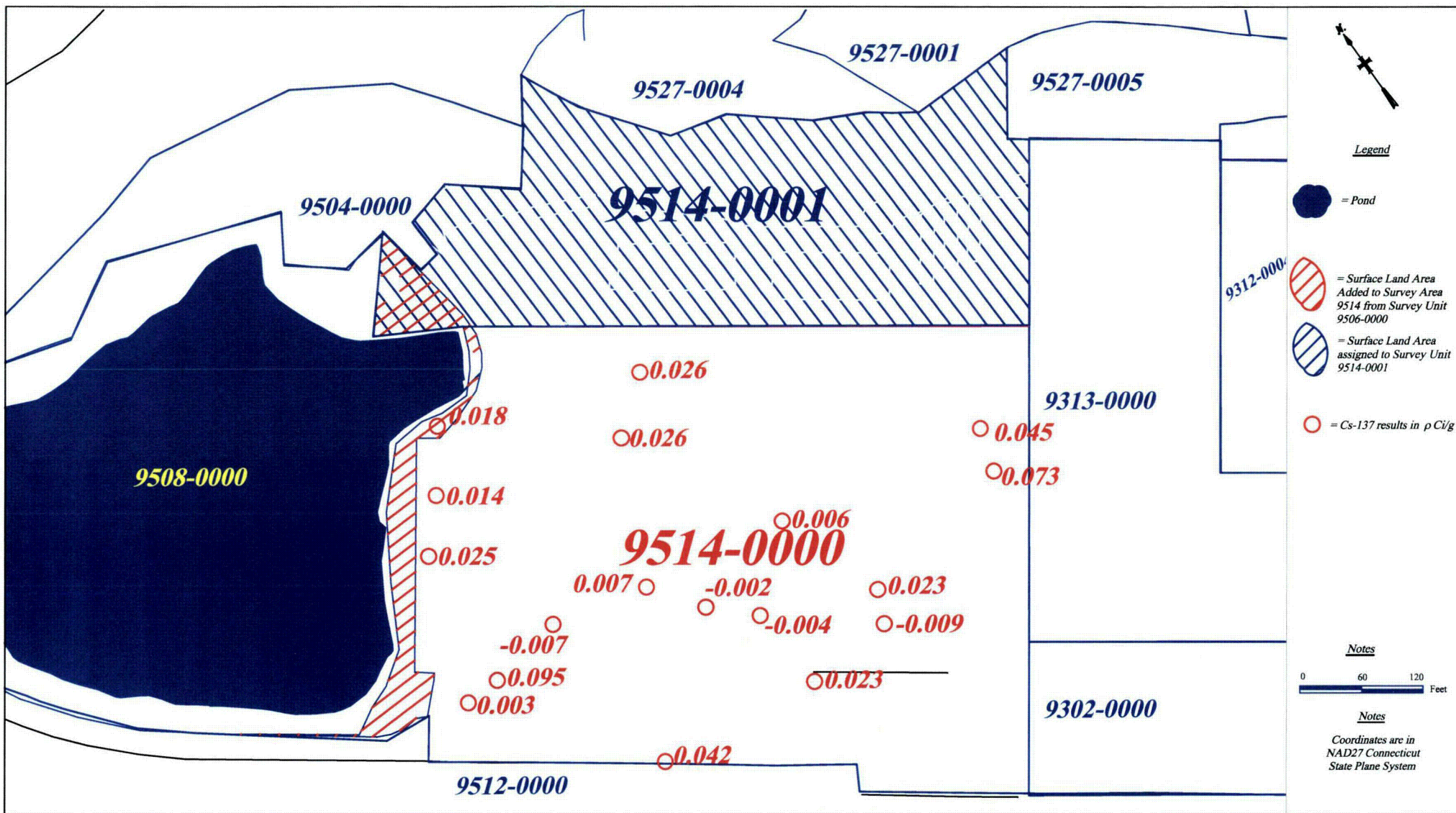


Figure 3

Connecticut Yankee Atomic Power Company
Cesium-137 Posting Plot for Survey Unit 9514-0000

April 2007

Revision: 0

Created by: R. Massengill

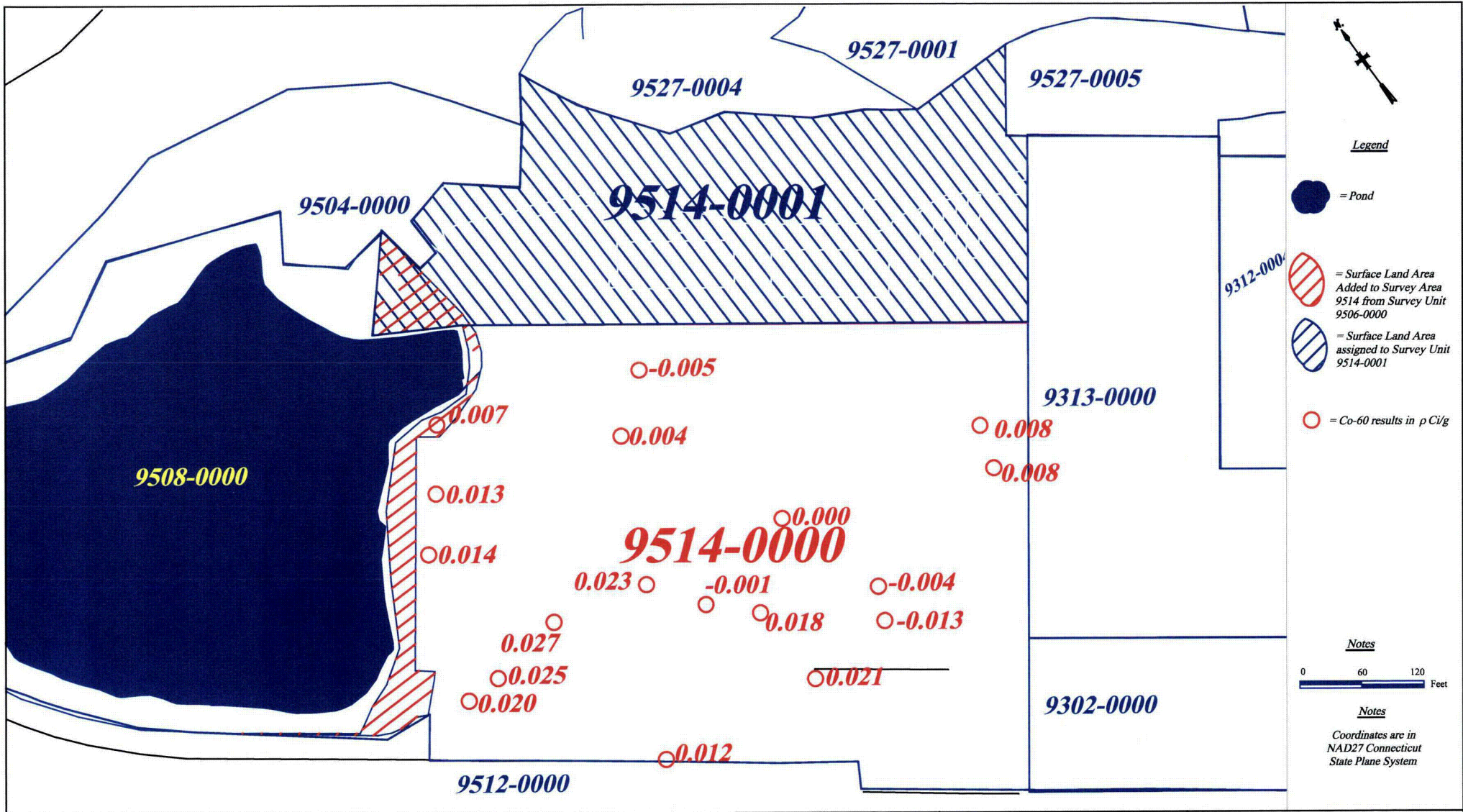


Figure 4

Connecticut Yankee Atomic Power Company
Cobalt-60 Posting Plot for Survey Unit 9514-0000

April 2007

Revision: 0

Created by: R. Massengill

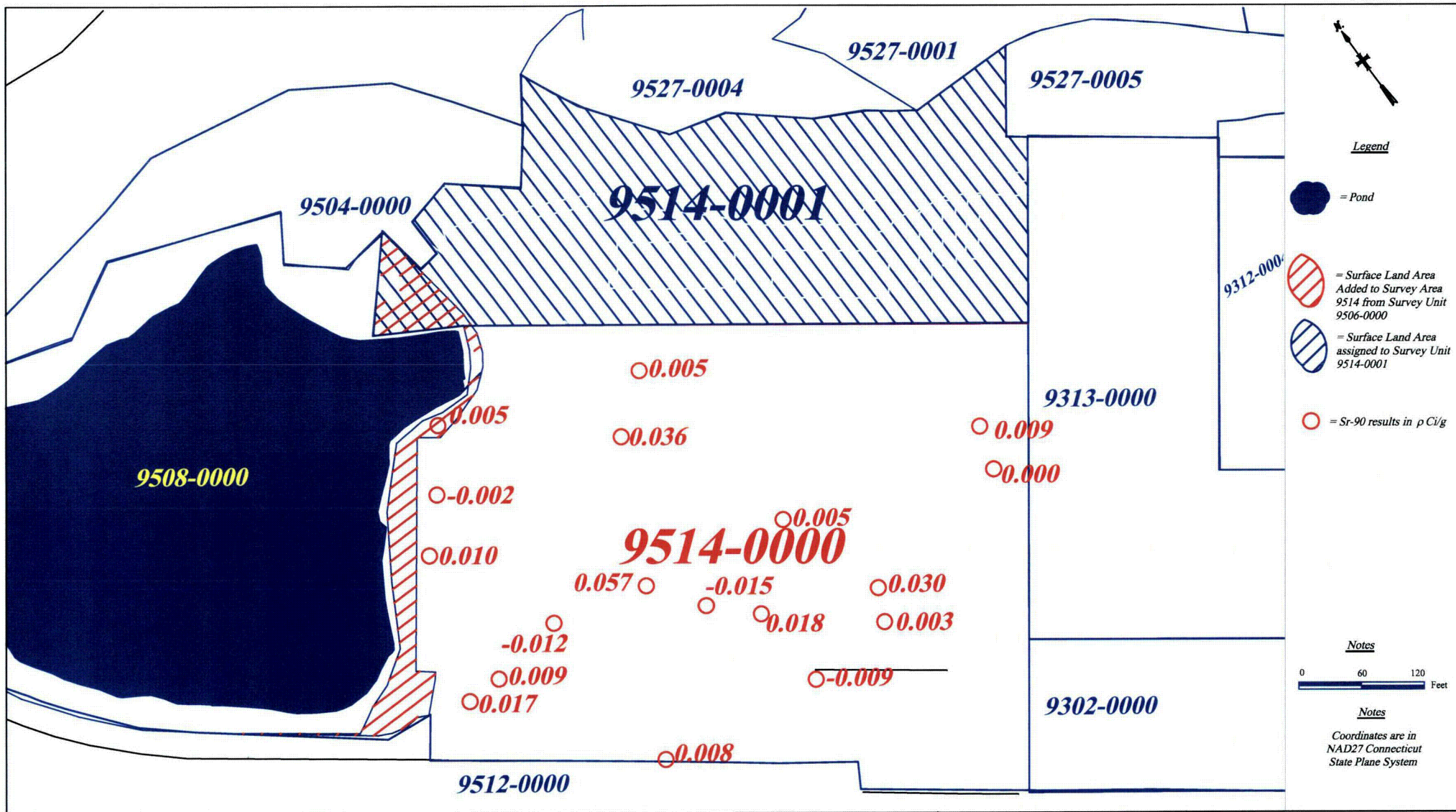


Figure 5

Connecticut Yankee Atomic Power Company
Strontium-90 Posting Plot for Survey Unit 9514-0000

April 2007

Revision: 0

Created by: R. Massengill

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ATTACHMENT 2 (SCAN RESULTS)

SURVEY UNIT 9514-0000
SAMPLE LOCATION SCAN RESULTS

Survey Location Number	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>A.L. ("+"=Yes)	E-600 Serial #	Probe Serial #
9514-00-BL-00-01-0	2/28/2007	9:51:00	5.43E+03	1.05E+03	6.48E+03		1107	1007
9514-00-SL-00-01-0	2/28/2007	9:54:00	5.68E+03				1107	1007
9514-00-BL-00-02-0	2/28/2007	10:07:00	6.46E+03	1.15E+03	7.61E+03		1107	1007
9514-00-SL-00-02-0	2/28/2007	10:09:00	6.11E+03				1107	1007
9514-00-BL-00-03-0	2/28/2007	10:29:00	5.43E+03	1.05E+03	6.48E+03		1107	1007
9514-00-SL-00-03-0	2/28/2007	10:31:00	5.85E+03				1107	1007
9514-00-BL-00-04-0	2/28/2007	10:44:00	5.89E+03	1.10E+03	6.99E+03		1107	1007
9514-00-SL-00-04-0	2/28/2007	10:47:00	6.21E+03				1107	1007
9514-00-BL-00-05-0	2/28/2007	10:37:00	6.20E+03	1.12E+03	7.32E+03		1107	1007
9514-00-SL-00-05-0	2/28/2007	10:40:00	6.49E+03				1107	1007
9514-00-BL-00-06-0	2/28/2007	13:38:00	6.96E+03	1.19E+03	8.15E+03		1107	1007
9514-00-SL-00-06-0	2/28/2007	13:41:00	7.42E+03				1107	1007
9514-00-BL-00-07-0	2/28/2007	13:26:00	6.78E+03	1.18E+03	7.96E+03		1107	1007
9514-00-SL-00-07-0	2/28/2007	13:27:00	7.10E+03				1107	1007
9514-00-BL-00-08-0	4/10/2007	11:15:00	5.35E+03	1.05E+03	6.48E+03		1107	1007
9514-00-SL-00-08-0	4/10/2007	11:16:00	5.40E+03				1107	1007
9514-00-BL-00-09-0	2/28/2007	13:11:00	6.50E+03	1.15E+03	7.65E+03		1107	1007
9514-00-SL-00-09-0	2/28/2007	13:14:00	7.24E+03				1107	1007
9514-00-BL-00-10-0	2/28/2007	10:13:00	6.94E+03	1.19E+03	8.13E+03		1107	1007
9514-00-SL-00-10-0	2/28/2007	10:15:00	5.70E+03				1107	1007
9514-00-BL-00-11-0	2/28/2007	13:34:00	7.98E+03	1.28E+03	9.26E+03		1107	1007
9514-00-SL-00-11-0	2/28/2007	13:37:00	7.53E+03				1107	1007
9514-00-BL-00-12-0	2/28/2007	13:19:00	6.36E+03	1.14E+03	7.50E+03		1107	1007
9514-00-SL-00-12-0	2/28/2007	13:21:00	6.96E+03				1107	1007
9514-00-BL-00-13-0	2/28/2007	13:25:00	6.52E+03	1.15E+03	7.67E+03		1107	1007
9514-00-SL-00-13-0	2/28/2007	13:26:00	6.43E+03				1107	1007

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SAMPLE LOCATION SCAN RESULTS

Survey Location Number	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>A.L. ("+"=Yes)	E-600 Serial #	Probe Serial #
9514-00-BL-00-14-0	2/28/2007	14:07:00	6.74E+03	1.17E+03	7.91E+03		1107	1007
9514-00-SL-00-14-0	2/28/2007	14:10:00	6.61E+03				1107	1007
9514-00-BL-00-15-0	2/28/2007	10:02:00	6.12E+03	1.12E+03	7.24E+03		1107	1007
9514-00-SL-00-15-0	2/28/2007	10:04:00	6.87E+03				1107	1007
9514-00-BL-00-16-0	4/10/2007	11:25:00	5.66E+03	1.07E+03	6.73E+03		1107	1007
9514-00-SL-00-16-0	4/10/2007	11:26:00	5.87E+03				1107	1007
9514-00-BL-00-17-0	4/10/2007	11:27:00	6.78E+03	1.18E+03	7.96E+03		1107	1007
9514-00-SL-00-17-0	4/10/2007	11:28:00	6.87E+03				1107	1007
9514-00-BL-00-18-0	4/10/2007	11:30:00	6.26E+03	1.13E+03	7.39E+03		1107	1007
9514-00-SL-00-18-0	4/10/2007	11:31:00	7.05E+03				1107	1007

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SCAN AREA SURVEY RESULTS

Survey Location Number	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>A.L. ("+"=Yes)	E-600 Serial #	Probe Serial #
9514-00-BC-01-01-0	2/28/2007	9:52:00	5.81E+03	1.09E+03	6.90E+03		1110	1010
9514-00-SC-01-01-0	2/28/2007	10:03:00	5.87E+03				1110	1010
9514-00-BC-01-02-0	2/28/2007	10:03:00	5.69E+03	1.08E+03	6.77E+03		1110	1010
9514-00-SC-01-02-0	2/28/2007	10:10:00	5.38E+03				1110	1010
9514-00-BC-01-03-0	2/28/2007	10:12:00	5.35E+03	1.04E+03	6.39E+03		1110	1010
9514-00-SC-01-03-0	2/28/2007	10:22:00	5.00E+03				1110	1010
9514-00-BC-01-04-0	2/28/2007	10:23:00	5.38E+03	1.05E+03	6.43E+03		1110	1010
9514-00-SC-01-04-0	2/28/2007	10:30:00	5.08E+03				1110	1010
9514-00-BC-01-05-0	2/28/2007	10:31:00	5.05E+03	1.01E+03	6.06E+03		1110	1010
9514-00-SC-01-05-0	2/28/2007	10:44:00	5.27E+03				1110	1010
9514-00-BC-02-01-0	2/27/2007	13:13:00	7.55E+03	1.24E+03	8.79E+03		1107	1007
9514-00-SC-02-01-0	2/27/2007	13:17:00	6.80E+03				1107	1007
9514-00-BC-02-02-0	2/27/2007	13:18:00	6.13E+03	1.12E+03	7.25E+03		1107	1007
9514-00-SC-02-02-0	2/27/2007	13:21:00	6.08E+03				1107	1007
9514-00-BC-02-03-0	2/27/2007	13:21:00	6.41E+03	1.14E+03	7.55E+03		1107	1007
9514-00-SC-02-03-0	2/27/2007	13:24:00	6.76E+03				1107	1007
9514-00-BC-02-04-0	2/27/2007	13:24:00	6.22E+03	1.13E+03	7.35E+03		1107	1007
9514-00-SC-02-04-0	2/27/2007	13:27:00	6.05E+03				1107	1007
9514-00-BC-02-05-0	2/27/2007	13:28:00	6.25E+03	1.13E+03	7.38E+03		1107	1007
9514-00-SC-02-05-0	2/27/2007	13:30:00	6.03E+03				1107	1007
9514-00-BC-02-06-0	2/27/2007	13:30:00	6.14E+03	1.12E+03	7.26E+03		1107	1007
9514-00-SC-02-06-0	2/27/2007	13:33:00	6.32E+03				1107	1007
9514-00-BC-02-07-0	2/27/2007	13:15:00	6.21E+03	1.13E+03	7.34E+03		1110	1010
9514-00-SC-02-07-0	2/27/2007	13:19:00	5.85E+03				1110	1010
9514-00-BC-02-08-0	2/27/2007	13:19:00	5.56E+03	1.06E+03	6.62E+03		1110	1010
9514-00-SC-02-08-0	2/27/2007	13:22:00	5.67E+03				1110	1010
9514-00-BC-02-09-0	2/27/2007	13:23:00	5.24E+03	1.03E+03	6.27E+03		1110	1010
9514-00-SC-02-09-0	2/27/2007	13:26:00	5.33E+03				1110	1010
9514-00-BC-02-10-0	2/27/2007	13:28:00	5.54E+03	1.06E+03	6.60E+03		1110	1010
9514-00-SC-02-10-0	2/27/2007	13:32:00	5.65E+03				1110	1010
9514-00-BC-02-11-0	2/27/2007	13:32:00	5.59E+03	1.07E+03	6.66E+03		1110	1010
9514-00-SC-02-11-0	2/27/2007	13:36:00	5.55E+03				1110	1010
9514-00-BC-02-12-0	2/27/2007	13:36:00	5.78E+03	1.09E+03	6.87E+03		1110	1010
9514-00-SC-02-12-0	2/27/2007	13:39:00	5.39E+03				1110	1010

SURVEY UNIT 9514-0000
SCAN AREA SURVEY RESULTS

Survey Location Number	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>A.L. ("+"=Yes)	E-600 Serial #	Probe Serial #
9514-00-BC-03-01-0	2/27/2007	13:54:00	6.93E+03	1.19E+03	8.12E+03		1107	1007
9514-00-SC-03-01-0	2/27/2007	13:55:00	6.97E+03				1107	1007
9514-00-BC-03-02-0	2/27/2007	13:56:00	7.25E+03	1.22E+03	8.47E+03		1107	1007
9514-00-SC-03-02-0	2/27/2007	13:58:00	7.15E+03				1107	1007
9514-00-BC-03-03-0	2/27/2007	13:59:00	7.13E+03	1.21E+03	8.34E+03		1107	1007
9514-00-SC-03-03-0	2/27/2007	14:01:00	7.73E+03				1107	1007
9514-00-BC-03-04-0	2/27/2007	14:01:00	6.68E+03	1.17E+03	7.85E+03		1107	1007
9514-00-SC-03-04-0	2/27/2007	14:03:00	6.83E+03				1107	1007
9514-00-BC-03-05-0	2/27/2007	14:04:00	6.54E+03	1.15E+03	7.69E+03		1107	1007
9514-00-SC-03-05-0	2/27/2007	14:06:00	6.46E+03				1107	1007
9514-00-BC-03-06-0	2/27/2007	14:07:00	6.55E+03	1.16E+03	7.71E+03		1107	1007
9514-00-SC-03-06-0	2/27/2007	14:09:00	6.64E+03				1107	1007
9514-00-BC-03-07-0	2/27/2007	13:54:00	5.30E+03	1.04E+03	6.34E+03		1110	1010
9514-00-SC-03-07-0	2/27/2007	14:00:00	6.13E+03				1110	1010
9514-00-BC-03-08-0	2/27/2007	14:01:00	6.83E+03	1.18E+03	8.01E+03		1110	1010
9514-00-SC-03-08-0	2/27/2007	14:02:00	6.70E+03				1110	1010
9514-00-BC-03-09-0	2/27/2007	14:04:00	6.21E+03	1.13E+03	7.34E+03		1110	1010
9514-00-SC-03-09-0	2/27/2007	14:06:00	6.62E+03				1110	1010
9514-00-BC-03-10-0	2/27/2007	14:07:00	6.77E+03	1.17E+03	7.94E+03		1110	1010
9514-00-SC-03-10-0	2/27/2007	14:08:00	6.23E+03				1110	1010
9514-00-BC-03-11-0	2/27/2007	14:10:00	6.55E+03	1.16E+03	7.71E+03		1110	1010
9514-00-SC-03-11-0	2/27/2007	14:14:00	7.28E+03				1110	1010
9514-00-BC-03-12-0	2/27/2007	14:15:00	5.94E+03	1.10E+03	7.04E+03		1110	1010
9514-00-SC-03-12-0	2/27/2007	14:17:00	5.01E+03				1110	1010
9514-00-BC-03-13-0	2/27/2007	14:19:00	4.41E+03	9.48E+02	6.36E+03		1110	1010
9514-00-SC-03-13-0	2/27/2007	14:19:00	4.79E+03				1110	1010
9514-00-BC-03-14-0	2/27/2007	14:20:00	5.63E+03	1.07E+03	6.70E+03		1110	1010
9514-00-SC-03-14-0	2/27/2007	14:21:00	4.59E+03				1110	1010
9514-00-BC-03-14-0	2/27/2007	14:25:00	4.47E+03	9.55E+02	5.42E+03		1110	1010
9514-00-SC-03-14-0	2/27/2007	14:27:00	5.18E+03				1110	1010
9514-00-BC-03-15-0	2/27/2007	14:12:00	6.45E+03	1.15E+03	7.60E+03		1107	1007
9514-00-SC-03-15-0	2/27/2007	14:13:00	5.42E+03				1107	1007
9514-00-BC-03-16-0	2/27/2007	14:14:00	5.45E+03	1.05E+03	6.50E+03		1107	1007
9514-00-SC-03-16-0	2/27/2007	14:15:00	5.70E+03				1107	1007

SURVEY UNIT 9514-0000
SCAN AREA SURVEY RESULTS

Survey Location Number	Log Date	Log Time	Reading (cpm)	MDCR (cpm)	Action L. (cpm)	>A.L. ("+"=Yes)	E-600 Serial #	Probe Serial #
9514-00-BC-03-17-0	2/27/2007	14:16:00	5.97E+03	1.10E+03	7.07E+03		1107	1007
9514-00-SC-03-17-0	2/27/2007	14:17:00	5.83E+03				1107	1007

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)



**Connecticut Yankee Atomic Power Co.
Soils PO# 002332
Work Order: 181810
SDG: MSR#07-00103**

<u>Laboratory ID</u>	<u>Client ID</u>
181810001	9514-0000-001F
181810002	9514-0000-002F
181810003	9514-0000-003F
181810004	9514-0000-004F
181810005	9514-0000-005F
181810006	9514-0000-006F
181810007	9514-0000-007F
181810008	9514-0000-009F
181810009	9514-0000-010F
181810010	9514-0000-011F
181810011	9514-0000-012F
181810012	9514-0000-013F
181810013	9514-0000-014F
181810014	9514-0000-014FS
181810015	9514-0000-015F
181810016	9514-0000-015FS



March 09, 2007

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

Re: Soils PO# 002332
Work Order: 181810
SDG: MSR#07-00103

Dear Mr. McCarthy:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 06, 2007. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4243.

Sincerely,

A handwritten signature in black ink, appearing to read 'Cheryl Jones', written in a cursive style.

Cheryl Jones
Project Manager

Purchase Order: 002332
Chain of Custody: 2007-00043 and 2007-00044
Enclosures

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Radiological Analysis	12
Sample Data Summary	31
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General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 181810
SDG: MSR#07-00103**

March 09, 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 March 06, 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>
181810001	9514-0000-001F
181810002	9514-0000-002F
181810003	9514-0000-003F
181810004	9514-0000-004F
181810005	9514-0000-005F
181810006	9514-0000-006F
181810007	9514-0000-007F
181810008	9514-0000-009F
181810009	9514-0000-010F
181810010	9514-0000-011F
181810011	9514-0000-012F
181810012	9514-0000-013F
181810013	9514-0000-014F
181810014	9514-0000-014FS
181810015	9514-0000-015F
181810016	9514-0000-015FS

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.

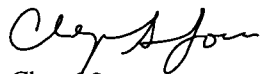
Analytical Request

Fourteen soil samples were analyzed for FSSGAM and Strontium-90. Two soil samples were analyzed for FSSGAM.

Data Package

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

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



Cheryl Jones
Project Manager

List of current GEL Certifications as of 09 March 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

Chain of Custody Form

No. 2007-00043

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)													181810	
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												
9514-0000-001F	2/28/07	0952	TS	G	BP	X								
9514-0000-002F	2/28/07	1008	TS	G	BP	X								
9514-0000-003F	2/28/07	1030	TS	G	BP	X								
9514-0000-004F	2/28/07	1045	TS	G	BP	X								
9514-0000-005F	2/28/07	1038	TS	G	BP	X								
9514-0000-006F	2/28/07	1341	TS	G	BP	X								
9514-0000-007F	2/28/07	1328	TS	G	BP	X								
9514-0000-009F	2/28/07	1312	TS	G	BP		X							
9514-0000-010F	2/28/07	1014	TS	G	BP		X							
9514-0000-011F	2/28/07	1337	TS	G	BP	X								
9514-0000-012F	2/28/07	1320	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-00103 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via:			Internal Container Temp.: <u>13</u> Deg. C					
						<input checked="" type="checkbox"/> Fed Ex			Custody Sealed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					
						<input type="checkbox"/> UPS			Custody Seal Intact? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					
						<input type="checkbox"/> Hand								
						<input type="checkbox"/> Other			Bill of Lading #					
1) Relinquished By <i>[Signature]</i>			Date/Time <i>3/5/07 0935</i>			2) Received By <i>[Signature]</i>			Date/Time <i>3/6/07 9:30</i>					
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

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Connecticut Yankee Atomic Power Company

Chain of Custody Form

No. 2007-00044

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							Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													181810	
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			
9514-0000-013F	2/28/07	1325	TS	G	BP	X								
9514-0000-014F	2/28/07	1410	TS	G	BP	X								
9514-0000-014FS	2/28/07	1410	TS	G	BP	X								
9514-0000-015F	2/28/07	1002	TS	G	BP	X								
9514-0000-015FS	2/28/07	1002	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-00103 <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>13</u> Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Bill of Lading # _____					
1) Relinquished By <i>[Signature]</i>		Date/Time <u>3/5/07 0935</u>		2) Received By <i>[Signature]</i>		Date/Time <u>3/6/07 9:30</u>								
3) Relinquished By		Date/Time		4) Received By		Date/Time								
5) Relinquished By		Date/Time		6) Received By		Date/Time								

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Figure 1. Sample Check-in List

Date/Time Received: 3/6/07 9:30

SDG#: MSL # 07-00103

Work Order Number: 181810

Shipping Container ID: 792943806545 Chain of Custody # 200700043, 2007-00044

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 13°
5. Vermiculite/packing materials is: Wet Dry
6. Number of samples in shipping container: 16°
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: Jeanette Date: 3/6/07

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>YANK</u>	SDG/ARCO/Work Order: <u>181810</u>
Date Received: <u>3/6/07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>[Signature]</i>
Received By: <u>JP</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?	X			Maximum Counts Observed*: <u>40 cpm</u>
B PCB Regulated?	X			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	X			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?	X			

PM (or PMA) review of Hazard classification: _____ Initials ATK Date: 3/6/07

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 181810**

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:	615126
Prep Batch Number:	615119
Dry Soil Prep GL-RAD-A-021 Batch Number:	615118

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290637	Method Blank (MB)
1201290638	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290639	181810008(9514-0000-009F) Matrix Spike (MS)
1201290640	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: 181810008 (9514-0000-009F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Alphaspec Pu, Solid-ALL FSS
Analytical Method: DOE EML HASL-300, Pu-11-RC Modified
Prep Method: Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep
Analytical Batch Number: 615127
Prep Batch Number: 615119
Dry Soil Prep GL-RAD-A-021 Batch Number: 615118

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290641	Method Blank (MB)
1201290642	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290643	181810008(9514-0000-009F) Matrix Spike (MS)
1201290644	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: 181810008 (9514-0000-009F).

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:	615128
Prep Batch Number:	615119
Dry Soil Prep GL-RAD-A-021 Batch Number:	615118

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290645	Method Blank (MB)
1201290646	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290647	181810008(9514-0000-009F) Matrix Spike (MS)
1201290648	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 9.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 181810008 (9514-0000-009F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Sample 181810009 (9514-0000-010F) was recounted due to high MDA. Samples 1201290645 (MB), 1201290646 (9514-0000-009F), 181810008 (9514-0000-009F) and 181810009 (9514-0000-010F) were recounted due to spectral interference.

Miscellaneous Information:

NCR Documentation

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

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:	615304
Prep Batch Number:	615118

Sample ID	Client ID
181810001	9514-0000-001F
181810002	9514-0000-002F
181810003	9514-0000-003F
181810004	9514-0000-004F
181810005	9514-0000-005F
181810006	9514-0000-006F
181810007	9514-0000-007F
181810008	9514-0000-009F
181810009	9514-0000-010F
181810010	9514-0000-011F
181810011	9514-0000-012F
181810012	9514-0000-013F
181810013	9514-0000-014F
181810014	9514-0000-014FS
181810015	9514-0000-015F
181810016	9514-0000-015FS
1201291074	Method Blank (MB)
1201291075	181810001(9514-0000-001F) Sample Duplicate (DUP)
1201291076	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: 181810001 (9514-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

The duplicate and the sample, 1201291075 (9514-0000-001F) and 181810001 (9514-0000-001F), did not meet the relative percent difference requirement for Ac-228 and Tl-208, however they do meet the relative error ratio requirement with a value of 1.86 for Ac-228 and 1.31 for Tl-208.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high counting uncertainty.	Bismuth-212	181810005 181810013
UI	Data rejected due to high peak width.		181810014
UI	Data rejected due to interference.	Cesium-134	181810015
		Manganese-54	181810010 181810016
UI	Data rejected due to low abundance.	Bismuth-212	181810012
		Cesium-134	181810006 181810011 181810012
		Potassium-40	181810010

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: 615295
Prep Batch Number: 615119
Dry Soil Prep GL-RAD-A-021 Batch Number: 615118

Sample ID	Client ID
181810001	9514-0000-001F
181810002	9514-0000-002F
181810003	9514-0000-003F
181810004	9514-0000-004F
181810005	9514-0000-005F
181810006	9514-0000-006F
181810007	9514-0000-007F
181810008	9514-0000-009F
181810009	9514-0000-010F
181810010	9514-0000-011F
181810011	9514-0000-012F
181810012	9514-0000-013F
181810013	9514-0000-014F
181810014	9514-0000-014FS
181810015	9514-0000-015F
181810016	9514-0000-015FS
1201291053	Method Blank (MB)
1201291054	181810010(9514-0000-011F) Sample Duplicate (DUP)
1201291055	181810010(9514-0000-011F) Matrix Spike (MS)
1201291056	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: 181810010 (9514-0000-011F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Chemical Recoveries

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Tc99, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	615131

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290657	Method Blank (MB)
1201290658	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290659	181810008(9514-0000-009F) Matrix Spike (MS)
1201290660	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: 181810008 (9514-0000-009F).

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:	615129
Prep Batch Number:	615119
Dry Soil Prep GL-RAD-A-021 Batch Number:	615118

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290649	Method Blank (MB)
1201290650	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290651	181810008(9514-0000-009F) Matrix Spike (MS)
1201290652	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: 181810008 (9514-0000-009F).

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: 616259
Prep Batch Number: 615119
Dry Soil Prep GL-RAD-A-021 Batch Number: 615118

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201293431	Method Blank (MB)
1201293432	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201293433	181810008(9514-0000-009F) Matrix Spike (MS)
1201293434	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: 181810008 (9514-0000-009F).

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 re-prepped due to low/high recovery.

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: LSC, Tritium Dist, Solid - 3 pCi/g
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 615132

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290665	Method Blank (MB)
1201290666	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290667	181810008(9514-0000-009F) Matrix Spike (MS)
1201290668	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: 181810008 (9514-0000-009F).

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: 615134

Sample ID	Client ID
181810008	9514-0000-009F
181810009	9514-0000-010F
1201290673	Method Blank (MB)
1201290674	181810008(9514-0000-009F) Sample Duplicate (DUP)
1201290675	181810008(9514-0000-009F) Matrix Spike (MS)
1201290676	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: 181810008 (9514-0000-009F).

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 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#07-00103 GEL Work Order: 181810

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.

 3/12/07

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

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

Report Date: March 12, 2007

Client Sample ID:	9514-0000-001F	Project:	YANK01204
Sample ID:	181810001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	28-FEB-07		
Receive Date:	06-MAR-07		
Collector:	Client		
Moisture:	6.8%		

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		0.430	+/-0.183	0.0807	+/-0.183	0.161	pCi/g		MJH1	03/07/07	0948	615304
Americium-241	U	-0.0148	+/-0.0972	0.0791	+/-0.0972	0.158	pCi/g					
Bismuth-212		0.506	+/-0.200	0.152	+/-0.200	0.304	pCi/g					
Bismuth-214		0.459	+/-0.0994	0.0338	+/-0.0994	0.0676	pCi/g					
Cesium-134	U	0.0487	+/-0.0404	0.0253	+/-0.0404	0.0505	pCi/g					
Cesium-137		0.0422	+/-0.0376	0.0181	+/-0.0376	0.0361	pCi/g					
Cobalt-60	U	0.0117	+/-0.0245	0.0219	+/-0.0245	0.0438	pCi/g					
Europium-152	U	0.0413	+/-0.0666	0.0535	+/-0.0666	0.107	pCi/g					
Europium-154	U	0.0955	+/-0.077	0.068	+/-0.077	0.136	pCi/g					
Europium-155	U	-0.00556	+/-0.0613	0.054	+/-0.0613	0.108	pCi/g					
Lead-212		0.518	+/-0.0715	0.0311	+/-0.0715	0.0621	pCi/g					
Lead-214		0.436	+/-0.0997	0.0377	+/-0.0997	0.0754	pCi/g					
Manganese-54	U	-0.000608	+/-0.0226	0.019	+/-0.0226	0.038	pCi/g					
Niobium-94	U	0.00747	+/-0.0197	0.0175	+/-0.0197	0.035	pCi/g					
Potassium-40		8.60	+/-1.04	0.143	+/-1.04	0.285	pCi/g					
Radium-226		0.459	+/-0.0994	0.0338	+/-0.0994	0.0676	pCi/g					
Silver-108m	U	-0.00544	+/-0.0206	0.0172	+/-0.0206	0.0343	pCi/g					
Thallium-208		0.189	+/-0.0471	0.0168	+/-0.0471	0.0336	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.00752	+/-0.0183	0.0143	+/-0.0183	0.0333	pCi/g		KSD1	03/09/07	1711	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-001F
Sample ID: 181810001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

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: March 12, 2007

Client Sample ID: 9514-0000-002F
Sample ID: 181810002
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 5.83%

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		0.494	+/-0.178	0.0616	+/-0.178	0.123	pCi/g		MJH1	03/07/07	0948	615304
Americium-241	U	-0.141	+/-0.0945	0.0813	+/-0.0945	0.163	pCi/g					
Bismuth-212		0.453	+/-0.250	0.141	+/-0.250	0.281	pCi/g					
Bismuth-214		0.469	+/-0.0944	0.0347	+/-0.0944	0.0694	pCi/g					
Cesium-134	U	0.0339	+/-0.0233	0.0223	+/-0.0233	0.0447	pCi/g					
Cesium-137	U	0.0251	+/-0.0231	0.021	+/-0.0231	0.0421	pCi/g					
Cobalt-60	U	0.014	+/-0.0215	0.0194	+/-0.0215	0.0387	pCi/g					
Europium-152	U	0.0223	+/-0.0666	0.0464	+/-0.0666	0.0928	pCi/g					
Europium-154	U	0.0282	+/-0.0669	0.0586	+/-0.0669	0.117	pCi/g					
Europium-155	U	0.024	+/-0.0615	0.0557	+/-0.0615	0.111	pCi/g					
Lead-212		0.541	+/-0.0715	0.026	+/-0.0715	0.052	pCi/g					
Lead-214		0.547	+/-0.0954	0.0339	+/-0.0954	0.0678	pCi/g					
Manganese-54	U	0.0269	+/-0.0282	0.0177	+/-0.0282	0.0353	pCi/g					
Niobium-94	U	0.0112	+/-0.0211	0.0184	+/-0.0211	0.0368	pCi/g					
Potassium-40		10.3	+/-1.07	0.156	+/-1.07	0.311	pCi/g					
Radium-226		0.469	+/-0.0944	0.0347	+/-0.0944	0.0694	pCi/g					
Silver-108m	U	1.410E-05	+/-0.0213	0.016	+/-0.0213	0.0321	pCi/g					
Thallium-208		0.144	+/-0.0376	0.0189	+/-0.0376	0.0378	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.00972	+/-0.0193	0.0148	+/-0.0193	0.0346	pCi/g		KSD1	03/09/07	1711	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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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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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-002F
Sample ID: 181810002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			84		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			84		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-003F
Sample ID: 181810003
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 6.17%

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		0.497	+/-0.141	0.0508	+/-0.141	0.102	pCi/g		MJH1	03/07/07	0949	615304
Americium-241	U	-0.00955	+/-0.088	0.0701	+/-0.088	0.140	pCi/g					
Bismuth-212		0.258	+/-0.221	0.115	+/-0.221	0.231	pCi/g					
Bismuth-214		0.387	+/-0.085	0.0299	+/-0.085	0.0597	pCi/g					
Cesium-134	U	0.0289	+/-0.0354	0.0207	+/-0.0354	0.0414	pCi/g					
Cesium-137	U	0.0183	+/-0.021	0.0194	+/-0.021	0.0388	pCi/g					
Cobalt-60	U	0.0067	+/-0.0195	0.0174	+/-0.0195	0.0347	pCi/g					
Europium-152	U	-0.0223	+/-0.0532	0.0432	+/-0.0532	0.0864	pCi/g					
Europium-154	U	-0.00275	+/-0.0621	0.053	+/-0.0621	0.106	pCi/g					
Europium-155	U	-0.000616	+/-0.051	0.0478	+/-0.051	0.0955	pCi/g					
Lead-212		0.447	+/-0.0576	0.0253	+/-0.0576	0.0507	pCi/g					
Lead-214		0.491	+/-0.0831	0.0295	+/-0.0831	0.059	pCi/g					
Manganese-54	U	-0.0159	+/-0.0197	0.0155	+/-0.0197	0.031	pCi/g					
Niobium-94	U	0.00161	+/-0.0173	0.0151	+/-0.0173	0.0302	pCi/g					
Potassium-40		8.25	+/-0.904	0.136	+/-0.904	0.271	pCi/g					
Radium-226		0.387	+/-0.085	0.0299	+/-0.085	0.0597	pCi/g					
Silver-108m	U	0.00277	+/-0.0167	0.0145	+/-0.0167	0.0289	pCi/g					
Thallium-208		0.169	+/-0.0346	0.0158	+/-0.0346	0.0316	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.00468	+/-0.020	0.0162	+/-0.020	0.0371	pCi/g		KSD1	03/09/07	1711	615295
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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	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-003F
Sample ID: 181810003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			91		(25%-125%)					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			91		(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
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 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-004F
Sample ID: 181810004
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: .497%

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		0.576	+/-0.130	0.0455	+/-0.130	0.091	pCi/g		MJH1	03/07/07	0949	615304
Americium-241	U	0.0354	+/-0.0596	0.052	+/-0.0596	0.104	pCi/g					
Bismuth-212		0.371	+/-0.213	0.108	+/-0.213	0.215	pCi/g					
Bismuth-214		0.399	+/-0.0776	0.0258	+/-0.0776	0.0515	pCi/g					
Cesium-134	U	0.0264	+/-0.0319	0.0185	+/-0.0319	0.037	pCi/g					
Cesium-137	U	0.0257	+/-0.0269	0.0143	+/-0.0269	0.0286	pCi/g					
Cobalt-60	U	0.00404	+/-0.017	0.0147	+/-0.017	0.0295	pCi/g					
Europium-152	U	-0.0314	+/-0.0486	0.0353	+/-0.0486	0.0706	pCi/g					
Europium-154	U	-0.0236	+/-0.0549	0.0404	+/-0.0549	0.0807	pCi/g					
Europium-155	U	0.0126	+/-0.047	0.0443	+/-0.047	0.0886	pCi/g					
Lead-212		0.457	+/-0.0549	0.0232	+/-0.0549	0.0464	pCi/g					
Lead-214		0.475	+/-0.0749	0.0276	+/-0.0749	0.0551	pCi/g					
Manganese-54	U	0.000633	+/-0.0161	0.0143	+/-0.0161	0.0285	pCi/g					
Niobium-94	U	0.0141	+/-0.0194	0.0135	+/-0.0194	0.0269	pCi/g					
Potassium-40		10.1	+/-0.926	0.118	+/-0.926	0.236	pCi/g					
Radium-226		0.399	+/-0.0776	0.0258	+/-0.0776	0.0515	pCi/g					
Silver-108m	U	-0.00267	+/-0.0138	0.0122	+/-0.0138	0.0243	pCi/g					
Thallium-208		0.167	+/-0.0339	0.0134	+/-0.0339	0.0268	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		0.0359	+/-0.0216	0.0134	+/-0.0216	0.0314	pCi/g		KSD1	03/09/07	1712	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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

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Address : 362 Injun Hollow Rd

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-004F
Sample ID: 181810004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			90		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			90		(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
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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: March 12, 2007

Client Sample ID: 9514-0000-005F
Sample ID: 181810005
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 5.16%

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		0.569	+/-0.167	0.0672	+/-0.167	0.134	pCi/g		MJH1	03/07/07	0950	615304
Americium-241	U	0.0163	+/-0.0353	0.027	+/-0.0353	0.054	pCi/g					
Bismuth-212	UI	0.00	+/-0.319	0.137	+/-0.319	0.273	pCi/g					
Bismuth-214		0.375	+/-0.0904	0.0368	+/-0.0904	0.0736	pCi/g					
Cesium-134	U	0.0226	+/-0.0262	0.0235	+/-0.0262	0.047	pCi/g					
Cesium-137	U	0.0259	+/-0.0274	0.0225	+/-0.0274	0.045	pCi/g					
Cobalt-60	U	-0.00542	+/-0.0286	0.0197	+/-0.0286	0.0393	pCi/g					
Europium-152	U	0.00914	+/-0.054	0.0449	+/-0.054	0.0897	pCi/g					
Europium-154	U	0.0992	+/-0.0753	0.0665	+/-0.0753	0.133	pCi/g					
Europium-155	U	0.00387	+/-0.0403	0.0426	+/-0.0403	0.0852	pCi/g					
Lead-212		0.536	+/-0.0701	0.0233	+/-0.0701	0.0467	pCi/g					
Lead-214		0.414	+/-0.083	0.0308	+/-0.083	0.0615	pCi/g					
Manganese-54	U	0.0161	+/-0.024	0.0216	+/-0.024	0.0431	pCi/g					
Niobium-94	U	-0.0246	+/-0.0217	0.0163	+/-0.0217	0.0325	pCi/g					
Potassium-40		9.26	+/-0.980	0.141	+/-0.980	0.282	pCi/g					
Radium-226		0.375	+/-0.0904	0.0368	+/-0.0904	0.0736	pCi/g					
Silver-108m	U	0.00368	+/-0.0163	0.0147	+/-0.0163	0.0294	pCi/g					
Thallium-208		0.187	+/-0.044	0.017	+/-0.044	0.0339	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.0052	+/-0.0164	0.013	+/-0.0164	0.0304	pCi/g		KSD1	03/09/07	1712	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-005F
Sample ID: 181810005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	NA
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			91		(25%-125%)					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			91		(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.

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: March 12, 2007

Client Sample ID: 9514-0000-006F
Sample ID: 181810006
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 6.28%

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		0.772	+/-0.172	0.0454	+/-0.172	0.0907	pCi/g		MJH1	03/07/07	0950	615304
Americium-241	U	-0.00491	+/-0.104	0.0859	+/-0.104	0.172	pCi/g					
Bismuth-212		0.471	+/-0.237	0.107	+/-0.237	0.214	pCi/g					
Bismuth-214		0.504	+/-0.0839	0.0286	+/-0.0839	0.0572	pCi/g					
Cesium-134	UI	0.00	+/-0.0279	0.0178	+/-0.0279	0.0356	pCi/g					
Cesium-137		0.0725	+/-0.0289	0.0159	+/-0.0289	0.0317	pCi/g					
Cobalt-60	U	-0.00979	+/-0.0167	0.0135	+/-0.0167	0.027	pCi/g					
Europium-152	U	0.0173	+/-0.0498	0.0385	+/-0.0498	0.0769	pCi/g					
Europium-154	U	-0.0167	+/-0.0589	0.0419	+/-0.0589	0.0838	pCi/g					
Europium-155	U	0.0509	+/-0.055	0.0506	+/-0.055	0.101	pCi/g					
Lead-212		0.684	+/-0.0737	0.0234	+/-0.0737	0.0468	pCi/g					
Lead-214		0.626	+/-0.093	0.0264	+/-0.093	0.0528	pCi/g					
Manganese-54	U	0.0192	+/-0.0218	0.0126	+/-0.0218	0.0252	pCi/g					
Niobium-94	U	0.00683	+/-0.0187	0.0141	+/-0.0187	0.0282	pCi/g					
Potassium-40		10.1	+/-0.880	0.135	+/-0.880	0.270	pCi/g					
Radium-226		0.504	+/-0.0839	0.0286	+/-0.0839	0.0572	pCi/g					
Silver-108m	U	-0.00478	+/-0.0148	0.0127	+/-0.0148	0.0254	pCi/g					
Thallium-208		0.201	+/-0.0394	0.0136	+/-0.0394	0.0272	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		U7.990E-05	+/-0.0165	0.0138	+/-0.0165	0.0326	pCi/g		KSD1	03/09/07	1712	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-006F
Sample ID: 181810006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			87		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			87		(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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 - 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: March 12, 2007

Client Sample ID: 9514-0000-007F
Sample ID: 181810007
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 6.52%

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		0.629	+/-0.140	0.0549	+/-0.140	0.110	pCi/g		MJH1	03/07/07	0951	615304
Americium-241	U	0.00626	+/-0.0608	0.0505	+/-0.0608	0.101	pCi/g					
Bismuth-212		0.366	+/-0.230	0.157	+/-0.230	0.314	pCi/g					
Bismuth-214		0.421	+/-0.0923	0.0345	+/-0.0923	0.0689	pCi/g					
Cesium-134	U	0.0215	+/-0.0246	0.0209	+/-0.0246	0.0418	pCi/g					
Cesium-137	U	0.0229	+/-0.0215	0.0169	+/-0.0215	0.0337	pCi/g					
Cobalt-60	U	-0.00377	+/-0.0175	0.0142	+/-0.0175	0.0284	pCi/g					
Europium-152	U	-0.0412	+/-0.0592	0.0437	+/-0.0592	0.0872	pCi/g					
Europium-154	U	-0.0162	+/-0.0738	0.0515	+/-0.0738	0.103	pCi/g					
Europium-155	U	0.00237	+/-0.054	0.0493	+/-0.054	0.0985	pCi/g					
Lead-212		0.540	+/-0.0673	0.026	+/-0.0673	0.052	pCi/g					
Lead-214		0.507	+/-0.088	0.0344	+/-0.088	0.0688	pCi/g					
Manganese-54	U	-0.00136	+/-0.0216	0.0188	+/-0.0216	0.0376	pCi/g					
Niobium-94	U	-0.0109	+/-0.0217	0.0158	+/-0.0217	0.0316	pCi/g					
Potassium-40		9.03	+/-0.902	0.129	+/-0.902	0.258	pCi/g					
Radium-226		0.421	+/-0.0923	0.0345	+/-0.0923	0.0689	pCi/g					
Silver-108m	U	0.0139	+/-0.0201	0.017	+/-0.0201	0.0339	pCi/g					
Thallium-208		0.191	+/-0.0359	0.016	+/-0.0359	0.0319	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.0304	+/-0.0232	0.0155	+/-0.0232	0.036	pCi/g		KSD1	03/09/07	1712	615295
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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	TMB1	03/06/07	1031	615118

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-007F
Sample ID: 181810007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-009F
Sample ID: 181810008
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 6.77%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0808	+/-0.143	0.145	+/-0.144	0.374	pCi/g		GXR1	03/07/07	1533	615126	
Curium-242	U	0.00253	+/-0.0972	0.0802	+/-0.0972	0.246	pCi/g						
Curium-243/244	U	0.0098	+/-0.188	0.155	+/-0.188	0.394	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0422	+/-0.0879	0.098	+/-0.0881	0.295	pCi/g		GXR1	03/07/07	1533	615127	
Plutonium-239/240	U	0.111	+/-0.147	0.0653	+/-0.147	0.229	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-0.807	+/-7.20	6.09	+/-7.20	13.0	pCi/g		GXR1	03/09/07	1223	615128	
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.666	+/-0.184	0.077	+/-0.184	0.154	pCi/g		MJH1	03/07/07	0951	615304	
Americium-241	U	0.00708	+/-0.0347	0.0284	+/-0.0347	0.0567	pCi/g						
Bismuth-212	U	0.280	+/-0.253	0.154	+/-0.253	0.308	pCi/g						
Bismuth-214		0.479	+/-0.096	0.0346	+/-0.096	0.0692	pCi/g						
Cesium-134	U	0.0271	+/-0.0288	0.0271	+/-0.0288	0.0542	pCi/g						
Cesium-137	U	0.00627	+/-0.029	0.0227	+/-0.029	0.0454	pCi/g						
Cobalt-60	U	0.000224	+/-0.029	0.0243	+/-0.029	0.0486	pCi/g						
Europium-152	U	0.0107	+/-0.0815	0.0502	+/-0.0815	0.100	pCi/g						
Europium-154	U	0.0874	+/-0.0837	0.0723	+/-0.0837	0.145	pCi/g						
Europium-155	U	0.032	+/-0.0534	0.0473	+/-0.0534	0.0945	pCi/g						
Lead-212		0.552	+/-0.0736	0.0253	+/-0.0736	0.0507	pCi/g						
Lead-214		0.478	+/-0.101	0.035	+/-0.101	0.070	pCi/g						
Manganese-54	U	0.012	+/-0.0251	0.0228	+/-0.0251	0.0455	pCi/g						
Niobium-94	U	-0.00467	+/-0.023	0.020	+/-0.023	0.040	pCi/g						
Potassium-40		9.15	+/-1.03	0.230	+/-1.03	0.459	pCi/g						
Radium-226		0.479	+/-0.096	0.0346	+/-0.096	0.0692	pCi/g						
Silver-108m	U	0.0319	+/-0.0289	0.0187	+/-0.0289	0.0374	pCi/g						
Thallium-208		0.208	+/-0.050	0.0179	+/-0.050	0.0357	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00471	+/-0.018	0.0144	+/-0.018	0.0337	pCi/g		KSD1	03/09/07	1712	615295	
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	1.38	+/-1.27	1.01	+/-1.27	2.11	pCi/g		AXD2	03/07/07	1842	615132	

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Certificate of Analysis

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Address : 362 Injun Hollow Rd

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-009F
Sample ID: 181810008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0114	+/-0.0943	0.0789	+/-0.0943	0.162	pCi/g		AXD2	03/08/07	0518	615134	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-6.81	+/-33.1	22.8	+/-33.1	47.9	pCi/g		MXP1	03/09/07	0351	615129	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-2.18	+/-8.52	7.26	+/-8.52	15.3	pCi/g		MXP1	03/10/07	1803	616259	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.0992	+/-0.225	0.191	+/-0.225	0.388	pCi/g		MXP1	03/11/07	2107	615131	

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EML HASL 300, 4.5.2.3
5	EPA 905.0 Modified
6	EPA 906.0 Modified
7	EPA EERF C-01 Modified
8	DOE RESL Fe-1, Modified
9	DOE RESL Ni-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	87	(15%-125%)
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	87	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	76	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	76	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	89	(25%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	89	(25%-125%)

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Certificate of Analysis

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-009F
Sample ID: 181810008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Strontium Carrier		GFPC, Sr90, solid-ALL	FSS		89		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL	FSS		89		(25%-125%)						
Iron-59 Tracer		Liquid Scint Fe55, Solid-ALL	FS		65		(15%-125%)						
Iron-59 Tracer		Liquid Scint Fe55, Solid-ALL	FS		65		(15%-125%)						
Nickel Carrier		Liquid Scint Ni63, Solid-ALL	FS		88		(25%-125%)						
Nickel Carrier		Liquid Scint Ni63, Solid-ALL	FS		88		(25%-125%)						
Technetium-99m Tracer		Liquid Scint Tc99, Solid-ALL	FS		83		(15%-125%)						
Technetium-99m Tracer		Liquid Scint Tc99, Solid-ALL	FS		83		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
 - BD Results are either below the MDC or tracer recovery is low
 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
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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: March 12, 2007

Client Sample ID: 9514-0000-010F
Sample ID: 181810009
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 5.11%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.125	+/-0.139	0.162	+/-0.140	0.427	pCi/g		GXR1	03/07/07	1533	615126	
Curium-242	U	-0.0359	+/-0.0924	0.099	+/-0.0925	0.304	pCi/g						
Curium-243/244	U	0.0921	+/-0.211	0.148	+/-0.211	0.398	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.125	+/-0.221	0.152	+/-0.221	0.394	pCi/g		GXR1	03/07/07	1533	615127	
Plutonium-239/240	U	0.00929	+/-0.0704	0.0516	+/-0.0705	0.193	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	2.47	+/-13.5	11.2	+/-13.5	23.5	pCi/g		GXR1	03/09/07	1538	615128	
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.347	+/-0.111	0.0395	+/-0.111	0.079	pCi/g		MJH1	03/07/07	0952	615304	
Americium-241	U	0.0265	+/-0.0539	0.0449	+/-0.0539	0.0898	pCi/g						
Bismuth-212		0.270	+/-0.191	0.0855	+/-0.191	0.171	pCi/g						
Bismuth-214		0.319	+/-0.0591	0.0227	+/-0.0591	0.0454	pCi/g						
Cesium-134	U	0.0067	+/-0.0165	0.0144	+/-0.0165	0.0288	pCi/g						
Cesium-137	U	0.0141	+/-0.0149	0.0136	+/-0.0149	0.0272	pCi/g						
Cobalt-60	U	0.0131	+/-0.0146	0.0135	+/-0.0146	0.027	pCi/g						
Europium-152	U	0.0197	+/-0.0602	0.0325	+/-0.0602	0.0649	pCi/g						
Europium-154	U	0.00546	+/-0.0445	0.0388	+/-0.0445	0.0776	pCi/g						
Europium-155	U	-0.0119	+/-0.0447	0.0395	+/-0.0447	0.079	pCi/g						
Lead-212		0.386	+/-0.0477	0.0203	+/-0.0477	0.0406	pCi/g						
Lead-214		0.425	+/-0.0659	0.0214	+/-0.0659	0.0427	pCi/g						
Manganese-54	U	0.0153	+/-0.0219	0.0108	+/-0.0219	0.0217	pCi/g						
Niobium-94	U	0.00235	+/-0.0206	0.0113	+/-0.0206	0.0226	pCi/g						
Potassium-40		9.63	+/-0.828	0.106	+/-0.828	0.213	pCi/g						
Radium-226		0.319	+/-0.0591	0.0227	+/-0.0591	0.0454	pCi/g						
Silver-108m	U	0.00375	+/-0.0122	0.0108	+/-0.0122	0.0216	pCi/g						
Thallium-208		0.119	+/-0.0318	0.0116	+/-0.0318	0.0232	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00234	+/-0.0167	0.0143	+/-0.0167	0.0334	pCi/g		KSD1	03/09/07	1712	615295	
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	1.03	+/-1.20	0.967	+/-1.20	2.03	pCi/g		AXD2	03/07/07	1945	615132	

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-010F
Sample ID: 181810009

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>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	0.053	+/-0.0949	0.0785	+/-0.0949	0.161	pCi/g		AXD2	03/08/07	0620	615134
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	8.39	+/-39.7	26.8	+/-39.7	56.2	pCi/g		MXPI	03/09/07	0522	615129
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	3.49	+/-9.37	7.69	+/-9.37	16.2	pCi/g		MXPI	03/10/07	1819	616259
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99	U	-0.0251	+/-0.244	0.205	+/-0.244	0.417	pCi/g		MXPI	03/11/07	2154	615131

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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	DOE EML HASL-300, Pu-11-RC Modified
5	EML HASL 300, 4.5.2.3
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 RESL Ni-1, Modified
12	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	82	(15%-125%)
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	82	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	83	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	83	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	34	(25%-125%)

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Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: March 12, 2007

Client Sample ID: 9514-0000-010F
Sample ID: 181810009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Plutonium-242 Tracer		Liquid Scint Pu241, Solid-ALL FS			34		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			92		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			92		(25%-125%)						
Iron-59 Tracer		Liquid Scint Fe55, Solid-ALL FS			63		(15%-125%)						
Iron-59 Tracer		Liquid Scint Fe55, Solid-ALL FS			63		(15%-125%)						
Nickel Carrier		Liquid Scint Ni63, Solid-ALL FS			84		(25%-125%)						
Nickel Carrier		Liquid Scint Ni63, Solid-ALL FS			84		(25%-125%)						
Technetium-99m Tracer		Liquid Scint Tc99, Solid-ALL FS			77		(15%-125%)						
Technetium-99m Tracer		Liquid Scint Tc99, Solid-ALL FS			77		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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: March 12, 2007

Client Sample ID: 9514-0000-011F
Sample ID: 181810010
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 7.06%

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		0.641	+/-0.189	0.0548	+/-0.189	0.110	pCi/g		MJH1	03/07/07	1054	615304
Americium-241	U	0.0162	+/-0.0951	0.0891	+/-0.0951	0.178	pCi/g					
Bismuth-212		0.570	+/-0.256	0.123	+/-0.256	0.246	pCi/g					
Bismuth-214		0.443	+/-0.0951	0.0324	+/-0.0951	0.0648	pCi/g					
Cesium-134	U	0.022	+/-0.0291	0.0237	+/-0.0291	0.0474	pCi/g					
Cesium-137		0.0448	+/-0.0302	0.0201	+/-0.0302	0.0403	pCi/g					
Cobalt-60	U	0.00817	+/-0.020	0.0177	+/-0.020	0.0353	pCi/g					
Europium-152	U	0.032	+/-0.0724	0.0468	+/-0.0724	0.0936	pCi/g					
Europium-154	U	0.0158	+/-0.0583	0.0507	+/-0.0583	0.101	pCi/g					
Europium-155	U	0.00937	+/-0.062	0.0565	+/-0.062	0.113	pCi/g					
Lead-212		0.657	+/-0.0731	0.0273	+/-0.0731	0.0546	pCi/g					
Lead-214		0.584	+/-0.0978	0.034	+/-0.0978	0.0679	pCi/g					
Manganese-54	UI	0.00	+/-0.0225	0.0179	+/-0.0225	0.0359	pCi/g					
Niobium-94	U	0.000765	+/-0.0191	0.0162	+/-0.0191	0.0324	pCi/g					
Potassium-40	UI	0.00	+/-0.842	0.807	+/-0.842	1.61	pCi/g					
Radium-226		0.443	+/-0.0951	0.0324	+/-0.0951	0.0648	pCi/g					
Silver-108m	U	-0.00633	+/-0.018	0.0154	+/-0.018	0.0308	pCi/g					
Thallium-208		0.201	+/-0.0412	0.0199	+/-0.0412	0.0398	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.00949	+/-0.0192	0.0147	+/-0.0192	0.0343	pCi/g		KSD1	03/09/07	1712	615295
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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	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-011F Project: YANK01204
Sample ID: 181810010 Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	N
Surrogate/Tracer recovery	Test				Recovery %		Acceptable Limits					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)					

Notes:

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

East Hampton, Connecticut 06424

Report Date: March 12, 2007

Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Client Sample ID: 9514-0000-012F
Sample ID: 181810011
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 5.73%

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		0.581	+/-0.151	0.0554	+/-0.151	0.111	pCi/g		MJH1	03/07/07	1054	615304
Americium-241	U	0.0602	+/-0.0579	0.0507	+/-0.0579	0.101	pCi/g					
Bismuth-212		0.325	+/-0.245	0.126	+/-0.245	0.251	pCi/g					
Bismuth-214		0.378	+/-0.0826	0.0302	+/-0.0826	0.0603	pCi/g					
Cesium-134	UI	0.00	+/-0.0242	0.0195	+/-0.0242	0.0389	pCi/g					
Cesium-137	U	0.0229	+/-0.0201	0.0185	+/-0.0201	0.037	pCi/g					
Cobalt-60	U	0.021	+/-0.0284	0.0166	+/-0.0284	0.0332	pCi/g					
Europium-152	U	0.0341	+/-0.0651	0.0429	+/-0.0651	0.0857	pCi/g					
Europium-154	U	0.00763	+/-0.0619	0.0457	+/-0.0619	0.0914	pCi/g					
Europium-155	U	0.0364	+/-0.048	0.0454	+/-0.048	0.0907	pCi/g					
Lead-212		0.519	+/-0.0639	0.0241	+/-0.0639	0.0482	pCi/g					
Lead-214		0.500	+/-0.0863	0.0302	+/-0.0863	0.0603	pCi/g					
Manganese-54	U	0.0186	+/-0.0252	0.0151	+/-0.0252	0.0303	pCi/g					
Niobium-94	U	0.0197	+/-0.0181	0.0166	+/-0.0181	0.0331	pCi/g					
Potassium-40		9.46	+/-0.899	0.136	+/-0.899	0.272	pCi/g					
Radium-226		0.378	+/-0.0826	0.0302	+/-0.0826	0.0603	pCi/g					
Silver-108m	U	-0.00366	+/-0.0156	0.0136	+/-0.0156	0.0272	pCi/g					
Thallium-208		0.180	+/-0.0454	0.0131	+/-0.0454	0.0261	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.00925	+/-0.0193	0.0174	+/-0.0193	0.040	pCi/g		KSD1	03/09/07	1712	615295
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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	TMB1	03/06/07	1031	615118

The following Analytical Methods were performed

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

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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: March 12, 2007

Client Sample ID: 9514-0000-012F
Sample ID: 181810011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery %		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			83		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			83		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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 - < Result is less than value reported
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 - 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: March 12, 2007

Client Sample ID: 9514-0000-013F
Sample ID: 181810012
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 11.3%

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		0.605	+/-0.158	0.0626	+/-0.158	0.125	pCi/g		MJH1	03/07/07	1055	615304
Americium-241	U	0.00127	+/-0.0436	0.0266	+/-0.0436	0.0532	pCi/g					
Bismuth-212	UI	0.00	+/-0.189	0.181	+/-0.189	0.362	pCi/g					
Bismuth-214		0.582	+/-0.0948	0.0333	+/-0.0948	0.0666	pCi/g					
Cesium-134	UI	0.00	+/-0.0346	0.0209	+/-0.0346	0.0417	pCi/g					
Cesium-137	U	-0.00925	+/-0.0226	0.0183	+/-0.0226	0.0366	pCi/g					
Cobalt-60	U	-0.013	+/-0.0231	0.0182	+/-0.0231	0.0363	pCi/g					
Europium-152	U	0.00425	+/-0.0583	0.0435	+/-0.0583	0.087	pCi/g					
Europium-154	U	0.0429	+/-0.0673	0.0568	+/-0.0673	0.114	pCi/g					
Europium-155	U	0.0655	+/-0.0822	0.041	+/-0.0822	0.082	pCi/g					
Lead-212		0.684	+/-0.0858	0.0235	+/-0.0858	0.047	pCi/g					
Lead-214		0.617	+/-0.0939	0.029	+/-0.0939	0.0579	pCi/g					
Manganese-54	U	0.00743	+/-0.0191	0.0173	+/-0.0191	0.0345	pCi/g					
Niobium-94	U	0.00364	+/-0.0199	0.0172	+/-0.0199	0.0344	pCi/g					
Potassium-40		9.55	+/-1.04	0.129	+/-1.04	0.259	pCi/g					
Radium-226		0.582	+/-0.0948	0.0333	+/-0.0948	0.0666	pCi/g					
Silver-108m	U	0.00331	+/-0.0186	0.0146	+/-0.0186	0.0292	pCi/g					
Thallium-208		0.189	+/-0.0435	0.0154	+/-0.0435	0.0307	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.00276	+/-0.0183	0.0149	+/-0.0183	0.0347	pCi/g		KSD1	03/09/07	1712	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-013F
Sample ID: 181810012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			85		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			85		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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 - 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: March 12, 2007

Client Sample ID: 9514-0000-014F
Sample ID: 181810013
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 17.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.827	+/-0.235	0.106	+/-0.235	0.211	pCi/g		MJH1	03/07/07	1057	615304
Americium-241	U	0.0668	+/-0.0566	0.0465	+/-0.0566	0.0929	pCi/g					
Bismuth-212	UI	0.00	+/-0.567	0.242	+/-0.567	0.484	pCi/g					
Bismuth-214		0.476	+/-0.139	0.0531	+/-0.139	0.106	pCi/g					
Cesium-134	U	0.0724	+/-0.0509	0.0368	+/-0.0509	0.0735	pCi/g					
Cesium-137		0.0954	+/-0.0614	0.0305	+/-0.0614	0.0609	pCi/g					
Cobalt-60	U	0.025	+/-0.0386	0.0339	+/-0.0386	0.0677	pCi/g					
Europium-152	U	-0.0264	+/-0.0976	0.0725	+/-0.0976	0.145	pCi/g					
Europium-154	U	-0.0112	+/-0.114	0.0941	+/-0.114	0.188	pCi/g					
Europium-155	U	0.0866	+/-0.0815	0.0732	+/-0.0815	0.146	pCi/g					
Lead-212		0.843	+/-0.111	0.0396	+/-0.111	0.0791	pCi/g					
Lead-214		0.662	+/-0.131	0.0522	+/-0.131	0.104	pCi/g					
Manganese-54	U	-0.00194	+/-0.0357	0.0306	+/-0.0357	0.0611	pCi/g					
Niobium-94	U	0.00229	+/-0.0355	0.0297	+/-0.0355	0.0593	pCi/g					
Potassium-40		13.3	+/-1.39	0.254	+/-1.39	0.508	pCi/g					
Radium-226		0.476	+/-0.139	0.0531	+/-0.139	0.106	pCi/g					
Silver-108m	U	-0.0174	+/-0.0299	0.0249	+/-0.0299	0.0497	pCi/g					
Thallium-208		0.230	+/-0.0699	0.0274	+/-0.0699	0.0548	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.00902	+/-0.0173	0.0131	+/-0.0173	0.031	pCi/g		KSD1	03/09/07	1712	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-014F Project: YANK01204
Sample ID: 181810013 Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			91		(25%-125%)					
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			91		(25%-125%)					

Notes:

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 - < Result is less than value reported
 - > Result is greater than value reported
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 - 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: March 12, 2007

Client Sample ID: 9514-0000-014FS
Sample ID: 181810014
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 17.5%

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		0.836	+/-0.219	0.0773	+/-0.219	0.155	pCi/g		MJH1	03/07/07	1211	615304
Americium-241	U	0.0627	+/-0.116	0.0933	+/-0.116	0.187	pCi/g					
Bismuth-212	UI	0.00	+/-0.420	0.157	+/-0.420	0.313	pCi/g					
Bismuth-214		0.510	+/-0.115	0.0422	+/-0.115	0.0844	pCi/g					
Cesium-134	U	0.0361	+/-0.0359	0.0263	+/-0.0359	0.0525	pCi/g					
Cesium-137		0.113	+/-0.0397	0.0254	+/-0.0397	0.0508	pCi/g					
Cobalt-60	U	0.00051	+/-0.0263	0.0219	+/-0.0263	0.0437	pCi/g					
Europium-152	U	-0.00684	+/-0.0748	0.0561	+/-0.0748	0.112	pCi/g					
Europium-154	U	0.00964	+/-0.082	0.0691	+/-0.082	0.138	pCi/g					
Europium-155	U	0.0724	+/-0.0783	0.0657	+/-0.0783	0.131	pCi/g					
Lead-212		0.771	+/-0.0936	0.0308	+/-0.0936	0.0616	pCi/g					
Lead-214		0.682	+/-0.118	0.0409	+/-0.118	0.0817	pCi/g					
Manganese-54	U	-0.0196	+/-0.0252	0.0203	+/-0.0252	0.0406	pCi/g					
Niobium-94	U	-0.0215	+/-0.0236	0.0181	+/-0.0236	0.0361	pCi/g					
Potassium-40		12.2	+/-1.24	0.191	+/-1.24	0.381	pCi/g					
Radium-226		0.510	+/-0.115	0.0422	+/-0.115	0.0844	pCi/g					
Silver-108m	U	-0.0136	+/-0.0232	0.0191	+/-0.0232	0.0382	pCi/g					
Thallium-208		0.272	+/-0.048	0.0192	+/-0.048	0.0383	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.0293	+/-0.023	0.0155	+/-0.023	0.036	pCi/g		KSD1	03/09/07	1712	615295
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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	TMB1	03/06/07	1031	615118

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-014FS
Sample ID: 181810014

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

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

Notes:

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-015F
Sample ID: 181810015
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 9.31%

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

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

Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth

Waived

Actinium-228		0.737	+/-0.206	0.0754	+/-0.206	0.151	pCi/g		MJH1	03/07/07	1254	615304	
Americium-241	U	-0.0715	+/-0.112	0.0895	+/-0.112	0.179	pCi/g						
Bismuth-212		0.628	+/-0.366	0.143	+/-0.366	0.287	pCi/g						
Bismuth-214		0.505	+/-0.105	0.0386	+/-0.105	0.0771	pCi/g						
Cesium-134	UI	0.00	+/-0.0619	0.0231	+/-0.0619	0.0461	pCi/g						
Cesium-137	U	0.00326	+/-0.0234	0.0205	+/-0.0234	0.041	pCi/g						
Cobalt-60	U	0.0204	+/-0.0273	0.025	+/-0.0273	0.0499	pCi/g						
Europium-152	U	-0.0282	+/-0.074	0.0507	+/-0.074	0.101	pCi/g						
Europium-154	U	0.0172	+/-0.0854	0.0644	+/-0.0854	0.129	pCi/g						
Europium-155	U	0.094	+/-0.0939	0.0553	+/-0.0939	0.111	pCi/g						
Lead-212		0.709	+/-0.0832	0.0313	+/-0.0832	0.0626	pCi/g						
Lead-214		0.623	+/-0.105	0.0372	+/-0.105	0.0743	pCi/g						
Manganese-54	U	0.00539	+/-0.0266	0.0229	+/-0.0266	0.0458	pCi/g						
Niobium-94	U	-0.00195	+/-0.021	0.018	+/-0.021	0.0359	pCi/g						
Potassium-40		11.9	+/-1.24	0.173	+/-1.24	0.346	pCi/g						
Radium-226		0.505	+/-0.105	0.0386	+/-0.105	0.0771	pCi/g						
Silver-108m	U	2.360E-05	+/-0.0206	0.0176	+/-0.0206	0.0351	pCi/g						
Thallium-208		0.247	+/-0.0542	0.0202	+/-0.0542	0.0403	pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.017	+/-0.0217	0.0157	+/-0.0217	0.037	pCi/g		KSD1	03/09/07	1713	615295	
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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	TMB1	03/06/07	1031	615118

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

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

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

Report Date: March 12, 2007

Client Sample ID: 9514-0000-015F
Sample ID: 181810015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Notes
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			77		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			77		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
 - < Result is less than value reported
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 - 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: March 12, 2007

Client Sample ID: 9514-0000-015FS
Sample ID: 181810016
Matrix: TS
Collect Date: 28-FEB-07
Receive Date: 06-MAR-07
Collector: Client
Moisture: 9.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.871	+/-0.173	0.0683	+/-0.173	0.137	pCi/g		MJH1	03/07/07	1255	615304
Americium-241	U	0.0784	+/-0.101	0.086	+/-0.101	0.172	pCi/g					
Bismuth-212		0.440	+/-0.243	0.127	+/-0.243	0.254	pCi/g					
Bismuth-214		0.554	+/-0.0987	0.033	+/-0.0987	0.0659	pCi/g					
Cesium-134	U	0.0326	+/-0.0348	0.0233	+/-0.0348	0.0465	pCi/g					
Cesium-137	U	0.00412	+/-0.0228	0.0196	+/-0.0228	0.0393	pCi/g					
Cobalt-60	U	0.020	+/-0.0224	0.0206	+/-0.0224	0.0411	pCi/g					
Europium-152	U	-0.0215	+/-0.077	0.0457	+/-0.077	0.0913	pCi/g					
Europium-154	U	0.0183	+/-0.0709	0.0612	+/-0.0709	0.122	pCi/g					
Europium-155	U	0.0261	+/-0.0626	0.0579	+/-0.0626	0.116	pCi/g					
Lead-212		0.727	+/-0.0783	0.0286	+/-0.0783	0.0572	pCi/g					
Lead-214		0.554	+/-0.0919	0.0333	+/-0.0919	0.0666	pCi/g					
Manganese-54	UI	0.00	+/-0.027	0.0169	+/-0.027	0.0337	pCi/g					
Niobium-94	U	0.000212	+/-0.021	0.0178	+/-0.021	0.0356	pCi/g					
Potassium-40		12.2	+/-1.17	0.150	+/-1.17	0.301	pCi/g					
Radium-226		0.554	+/-0.0987	0.033	+/-0.0987	0.0659	pCi/g					
Silver-108m	U	0.00653	+/-0.0183	0.0165	+/-0.0183	0.0329	pCi/g					
Thallium-208		0.213	+/-0.0483	0.0175	+/-0.0483	0.035	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	0.000579	+/-0.0193	0.0161	+/-0.0193	0.0372	pCi/g		KSD1	03/09/07	1713	615295

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TMB1	03/06/07	1031	615118

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: March 12, 2007

Client Sample ID: 9514-0000-015FS
Sample ID: 181810016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			83		(25%-125%)						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			83		(25%-125%)						

Notes:

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

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 12, 2007
Page 1 of 9

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 181810

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	615126										
QC1201290638	181810008	DUP									
Americium-241	U	-0.0808	U	-0.0395	pCi/g	69		(0% - 100%)	GXR1	03/07/07	15:33
	Uncert:	+/-0.143		+/-0.140							
	TPU:	+/-0.144		+/-0.140							
Curium-242	U	0.00253	U	0.0387	pCi/g	175		(0% - 100%)			
	Uncert:	+/-0.0972		+/-0.131							
	TPU:	+/-0.0972		+/-0.131							
Curium-243/244	U	0.0098	U	-0.043	pCi/g	318		(0% - 100%)			
	Uncert:	+/-0.188		+/-0.173							
	TPU:	+/-0.188		+/-0.173							
QC1201290640	LCS										
Americium-241		12.9		14.3	pCi/g		111	(75%-125%)		03/07/07	15:33
	Uncert:			+/-1.30							
	TPU:			+/-2.30							
Curium-242			U	-0.0296	pCi/g						
	Uncert:			+/-0.029							
	TPU:			+/-0.0293							
Curium-243/244		15.5		15.6	pCi/g		101	(75%-125%)			
	Uncert:			+/-1.36							
	TPU:			+/-2.48							
QC1201290637	MB										
Americium-241			U	-0.0332	pCi/g					03/07/07	15:33
	Uncert:			+/-0.079							
	TPU:			+/-0.0791							
Curium-242			U	-0.0381	pCi/g						
	Uncert:			+/-0.0334							
	TPU:			+/-0.0338							
Curium-243/244			U	-0.133	pCi/g						
	Uncert:			+/-0.135							
	TPU:			+/-0.136							
QC1201290639	181810008	MS									
Americium-241	U	-0.0808		14.8	pCi/g		110	(75%-125%)			
	Uncert:	+/-0.143		+/-1.45							
	TPU:	+/-0.144		+/-2.52							
Curium-242	U	0.00253	U	0.0105	pCi/g						
	Uncert:	+/-0.0972		+/-0.0799							
	TPU:	+/-0.0972		+/-0.080							
Curium-243/244	U	0.0098		15.8	pCi/g		98	(75%-125%)			
	Uncert:	+/-0.188		+/-1.49							
	TPU:	+/-0.188		+/-2.65							
Batch	615127										
QC1201290642	181810008	DUP									
Plutonium-238	U	-0.0422	U	0.0565	pCi/g	1380		(0% - 100%)	GXR1	03/07/07	15:33

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

QC Summary

Workorder: 181810

Page 2 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	615127										
Plutonium-239/240		Uncert:	+/-0.0879	+/-0.185							
		TPU:	+/-0.0881	+/-0.185							
	U		0.111	U	0.134	pCi/g	19	(0% - 100%)			
		Uncert:	+/-0.147	+/-0.164							
		TPU:	+/-0.147	+/-0.164							
QC1201290644	LCS										
Plutonium-238				U	-0.0368	pCi/g		(75%-125%)		03/07/07	15:33
		Uncert:			+/-0.0766						
		TPU:			+/-0.0768						
Plutonium-239/240		12.8			13.3	pCi/g	104	(75%-125%)			
		Uncert:			+/-1.28						
		TPU:			+/-2.02						
QC1201290641	MB										
Plutonium-238				U	0.156	pCi/g				03/07/07	15:33
		Uncert:			+/-0.173						
		TPU:			+/-0.174						
Plutonium-239/240				U	0.00258	pCi/g					
		Uncert:			+/-0.0992						
		TPU:			+/-0.0992						
QC1201290643	181810008	MS									
Plutonium-238		U	-0.0422	U	0.086	pCi/g		(75%-125%)			
		Uncert:	+/-0.0879		+/-0.167						
		TPU:	+/-0.0881		+/-0.167						
Plutonium-239/240		13.5	U	0.111	14.2	pCi/g	105	(75%-125%)			
		Uncert:	+/-0.147		+/-1.34						
		TPU:	+/-0.147		+/-2.13						
Batch	615128										
QC1201290646	181810008	DUP									
Plutonium-241		U	-0.807	U	-1.01	pCi/g	0	(0% - 100%)	GXR1	03/09/07	13:11
		Uncert:	+/-7.20		+/-6.93						
		TPU:	+/-7.20		+/-6.93						
QC1201290648	LCS										
Plutonium-241		139			134	pCi/g	96	(75%-125%)		03/08/07	21:56
		Uncert:			+/-13.3						
		TPU:			+/-18.7						
QC1201290645	MB										
Plutonium-241				U	-0.93	pCi/g				03/09/07	12:55
		Uncert:			+/-8.30						
		TPU:			+/-8.30						
QC1201290647	181810008	MS									
Plutonium-241		142	U	-0.807	142	pCi/g	100	(75%-125%)		03/08/07	21:40
		Uncert:	+/-7.20		+/-13.9						
		TPU:	+/-7.20		+/-19.7						
Rad Gamma Spec											
Batch	615304										
QC1201291075	181810001	DUP									
Actinium-228			0.430		0.673	pCi/g	44	(0% - 100%)	MJH1	03/07/07	12:56
		Uncert:	+/-0.183		+/-0.180						
					+/-0.180						

GEL LABORATORIES LLC

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QC Summary

Workorder: 181810

Page 3 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 615304											
Americium-241		TPU:		+/-0.183							
	U			-0.0148	U	0.020	pCi/g	1340		(0% - 100%)	
		Uncert:		+/-0.0972		+/-0.0693					
Bismuth-212		TPU:		+/-0.0972		+/-0.0693					
				0.506		0.381	pCi/g	28		(0% - 100%)	
		Uncert:		+/-0.200		+/-0.251					
Bismuth-214		TPU:		+/-0.200		+/-0.251					
				0.459		0.469	pCi/g	2		(0% - 100%)	
		Uncert:		+/-0.0994		+/-0.0805					
Cesium-134		TPU:		+/-0.0994		+/-0.0805					
	U			0.0487	U	0.0311	pCi/g	44		(0% - 100%)	
		Uncert:		+/-0.0404		+/-0.0267					
Cesium-137		TPU:		+/-0.0404		+/-0.0267					
				0.0422		0.0613	pCi/g	37		(0% - 100%)	
		Uncert:		+/-0.0376		+/-0.027					
Cobalt-60		TPU:		+/-0.0376		+/-0.027					
	U			0.0117	U	0.0123	pCi/g	5		(0% - 100%)	
		Uncert:		+/-0.0245		+/-0.0228					
Europium-152		TPU:		+/-0.0245		+/-0.0228					
	U			0.0413	U	0.0226	pCi/g	58		(0% - 100%)	
		Uncert:		+/-0.0666		+/-0.0542					
Europium-154		TPU:		+/-0.0666		+/-0.0542					
	U			0.0955	U	0.0187	pCi/g	135		(0% - 100%)	
		Uncert:		+/-0.077		+/-0.0645					
Europium-155		TPU:		+/-0.077		+/-0.0645					
	U			-0.00556	U	0.0223	pCi/g	333		(0% - 100%)	
		Uncert:		+/-0.0613		+/-0.0654					
Lead-212		TPU:		+/-0.0613		+/-0.0654					
				0.518		0.504	pCi/g	3		(0% - 20%)	
		Uncert:		+/-0.0715		+/-0.064					
Lead-214		TPU:		+/-0.0715		+/-0.064					
				0.436		0.484	pCi/g	10		(0% - 100%)	
		Uncert:		+/-0.0997		+/-0.0802					
Manganese-54		TPU:		+/-0.0997		+/-0.0802					
	U			-0.000608	U	-0.00201	pCi/g	107		(0% - 100%)	
		Uncert:		+/-0.0226		+/-0.0203					
Niobium-94		TPU:		+/-0.0226		+/-0.0203					
	U			0.00747	U	-0.00494	pCi/g	981		(0% - 100%)	
		Uncert:		+/-0.0197		+/-0.0185					
Potassium-40		TPU:		+/-0.0197		+/-0.0185					
				8.60		9.95	pCi/g	15		(0% - 20%)	
		Uncert:		+/-1.04		+/-0.985					
Radium-226		TPU:		+/-1.04		+/-0.985					
				0.459		0.469	pCi/g	2		(0% - 100%)	
		Uncert:		+/-0.0994		+/-0.0805					
Silver-108m		TPU:		+/-0.0994		+/-0.0805					
	U			-0.00544	U	-0.00757	pCi/g	33		(0% - 100%)	
		Uncert:		+/-0.0206		+/-0.0163					

GEL LABORATORIES LLC

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

QC Summary

Workorder: 181810

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	615304										
Thallium-208	TPU:	+/-0.0206		+/-0.0163							
		0.189		0.150	pCi/g	23		(0% - 100%)			
	Uncert:	+/-0.0471		+/-0.0352							
	TPU:	+/-0.0471		+/-0.0352							
QC1201291076	LCS										
Actinium-228			U	0.0542	pCi/g					03/07/07	09:52
	Uncert:			+/-0.587							
	TPU:			+/-0.587							
Americium-241	23.4			26.2	pCi/g		112	(75%-125%)			
	Uncert:			+/-3.14							
	TPU:			+/-3.14							
Bismuth-212			U	0.0753	pCi/g						
	Uncert:			+/-1.04							
	TPU:			+/-1.04							
Bismuth-214			U	-0.0906	pCi/g						
	Uncert:			+/-0.235							
	TPU:			+/-0.235							
Cesium-134			U	0.0118	pCi/g						
	Uncert:			+/-0.149							
	TPU:			+/-0.149							
Cesium-137	9.46			9.68	pCi/g		102	(75%-125%)			
	Uncert:			+/-0.857							
	TPU:			+/-0.857							
Cobalt-60	13.5			13.8	pCi/g		102	(75%-125%)			
	Uncert:			+/-1.09							
	TPU:			+/-1.09							
Europium-152			U	-0.206	pCi/g						
	Uncert:			+/-0.301							
	TPU:			+/-0.301							
Europium-154			U	0.177	pCi/g						
	Uncert:			+/-0.251							
	TPU:			+/-0.251							
Europium-155			U	-0.0562	pCi/g						
	Uncert:			+/-0.310							
	TPU:			+/-0.310							
Lead-212			U	-0.0184	pCi/g						
	Uncert:			+/-0.164							
	TPU:			+/-0.164							
Lead-214			U	0.0688	pCi/g						
	Uncert:			+/-0.227							
	TPU:			+/-0.227							
Manganese-54			U	-0.0315	pCi/g						
	Uncert:			+/-0.139							
	TPU:			+/-0.139							
Niobium-94			U	-0.0873	pCi/g						
	Uncert:			+/-0.118							
	TPU:			+/-0.118							
Potassium-40			U	-0.369	pCi/g						

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QC Summary

Workorder: 181810

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch 615304									
Radium-226		U	-0.0906	pCi/g			(75%-125%)		
	Uncert:		+/-0.778						
	TPU:		+/-0.778						
Silver-108m		U	-0.00105	pCi/g					
	Uncert:		+/-0.235						
	TPU:		+/-0.235						
Thallium-208		U	0.0752	pCi/g					
	Uncert:		+/-0.120						
	TPU:		+/-0.120						
QC1201291074 MB Actinium-228		U	-0.0606	pCi/g					03/07/07 12:55
	Uncert:		+/-0.0632						
	TPU:		+/-0.0632						
Americium-241		U	-0.0174	pCi/g					
	Uncert:		+/-0.0509						
	TPU:		+/-0.0509						
Bismuth-212		U	0.0284	pCi/g					
	Uncert:		+/-0.116						
	TPU:		+/-0.116						
Bismuth-214		U	0.0195	pCi/g					
	Uncert:		+/-0.0542						
	TPU:		+/-0.0542						
Cesium-134		U	0.0192	pCi/g					
	Uncert:		+/-0.0196						
	TPU:		+/-0.0196						
Cesium-137		U	0.00349	pCi/g					
	Uncert:		+/-0.0152						
	TPU:		+/-0.0152						
Cobalt-60		U	-0.00929	pCi/g					
	Uncert:		+/-0.0136						
	TPU:		+/-0.0136						
Europium-152		U	-0.00507	pCi/g					
	Uncert:		+/-0.0354						
	TPU:		+/-0.0354						
Europium-154		U	0.00351	pCi/g					
	Uncert:		+/-0.0335						
	TPU:		+/-0.0335						
Europium-155		U	-0.006	pCi/g					
	Uncert:		+/-0.0314						
	TPU:		+/-0.0314						
Lead-212		U	0.0137	pCi/g					
	Uncert:		+/-0.0323						
	TPU:		+/-0.0323						
Lead-214		U	0.0169	pCi/g					
	Uncert:		+/-0.0437						
	TPU:		+/-0.0437						

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QC Summary

Workorder: 181810

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch 615304									
Manganese-54		U	0.00921	pCi/g					
	Uncert:		+/-0.013						
	TPU:		+/-0.013						
Niobium-94		U	-0.000898	pCi/g					
	Uncert:		+/-0.0132						
	TPU:		+/-0.0132						
Potassium-40		U	-0.177	pCi/g					
	Uncert:		+/-0.156						
	TPU:		+/-0.156						
Radium-226		U	0.0195	pCi/g					
	Uncert:		+/-0.0542						
	TPU:		+/-0.0542						
Silver-108m		U	0.00316	pCi/g					
	Uncert:		+/-0.0118						
	TPU:		+/-0.0118						
Thallium-208		U	0.0126	pCi/g					
	Uncert:		+/-0.0214						
	TPU:		+/-0.0214						
Rad Gas Flow									
Batch 615295									
QC1201291054	181810010	DUP							
Strontium-90		U	0.00949	U	0.00105	pCi/g	0	(0% - 100%) KSD1	03/09/07 17:13
	Uncert:		+/-0.0192		+/-0.0227				
	TPU:		+/-0.0192		+/-0.0227				
QC1201291056	LCS								
Strontium-90		1.52		1.46	pCi/g		96 (75%-125%)		03/09/07 17:14
	Uncert:			+/-0.106					
	TPU:			+/-0.115					
QC1201291053	MB								
Strontium-90				U	0.00807	pCi/g			03/09/07 17:13
	Uncert:				+/-0.0173				
	TPU:				+/-0.0173				
QC1201291055	181810010	MS							
Strontium-90		1.66	U	0.00949	1.53	pCi/g	92 (75%-125%)		03/09/07 17:14
	Uncert:			+/-0.0192	+/-0.118				
	TPU:			+/-0.0192	+/-0.127				
Rad Liquid Scintillation									
Batch 615129									
QC1201290650	181810008	DUP							
Iron-55		U	-6.81	U	15.4	pCi/g	0	(0% - 100%) MXP1	03/09/07 05:55
	Uncert:		+/-33.1		+/-41.4				
	TPU:		+/-33.1		+/-41.4				
QC1201290652	LCS								
Iron-55		1420		1390	pCi/g		98 (75%-125%)		03/09/07 06:27
	Uncert:			+/-81.5					
	TPU:			+/-121					
QC1201290649	MB								
Iron-55				U	24.1	pCi/g			03/09/07 05:38

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QC Summary

Workorder: 181810

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time	
Rad Liquid Scintillation												
Batch	615129											
				Uncert:							+/-43.5	
				TPU:							+/-43.6	
QC1201290651	181810008	MS										
Iron-55			U	1570	-6.81	1540	pCi/g	98 (75%-125%)		03/09/07	06:11	
				Uncert:	+/-33.1	+/-88.9						
				TPU:	+/-33.1	+/-134						
Batch	615131											
QC1201290658	181810008	DUP										
Technetium-99			U	-0.0992	U	0.00	pCi/g	0 (0% - 100%)	MXP1	03/11/07	23:28	
				Uncert:	+/-0.225	+/-0.217						
				TPU:	+/-0.225	+/-0.217						
QC1201290660	LCS											
Technetium-99				19.7		19.6	pCi/g	100 (75%-125%)		03/12/07	01:03	
				Uncert:		+/-0.438						
				TPU:		+/-0.650						
QC1201290657	MB											
Technetium-99			U			-0.0234	pCi/g			03/11/07	22:41	
				Uncert:		+/-0.202						
				TPU:		+/-0.202						
QC1201290659	181810008	MS										
Technetium-99			U	19.7	-0.0992	19.0	pCi/g	96 (75%-125%)		03/12/07	00:16	
				Uncert:	+/-0.225	+/-0.496						
				TPU:	+/-0.225	+/-0.682						
Batch	615132											
QC1201290666	181810008	DUP										
Tritium			U		1.38	2.11	pCi/g	42 (0% - 100%)	AXD2	03/07/07	21:50	
				Uncert:	+/-1.27	+/-1.26						
				TPU:	+/-1.27	+/-1.26						
QC1201290668	LCS											
Tritium				11.1		13.3	pCi/g	119 (75%-125%)		03/07/07	23:36	
				Uncert:		+/-3.09						
				TPU:		+/-3.10						
QC1201290665	MB											
Tritium			U			0.610	pCi/g			03/07/07	20:47	
				Uncert:		+/-1.17						
				TPU:		+/-1.17						
QC1201290667	181810008	MS										
Tritium			U	11.8	1.38	14.9	pCi/g	125 (75%-125%)		03/07/07	22:52	
				Uncert:	+/-1.27	+/-2.10						
				TPU:	+/-1.27	+/-2.11						
Batch	615134											
QC1201290674	181810008	DUP										
Carbon-14			U		0.0114	U	0.00918	pCi/g	0 (0% - 100%)	AXD2	03/08/07	08:25
				Uncert:	+/-0.0943	+/-0.0874						
				TPU:	+/-0.0943	+/-0.0874						
QC1201290676	LCS											
Carbon-14				6.75		6.68	pCi/g	99 (75%-125%)		03/08/07	10:29	
				Uncert:		+/-0.251						
				TPU:		+/-0.271						

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QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation										
Batch	615134									
QC1201290673	MB									
Carbon-14			U	0.0548	pCi/g				03/08/07	07:22
				Uncert: +/-0.0893						
				TPU: +/-0.0893						
QC1201290675	181810008 MS									
Carbon-14		6.97	U	0.0114	7.19	pCi/g	103 (75%-125%)		03/08/07	09:27
				Uncert: +/-0.0943	+/-0.205					
				TPU: +/-0.0943	+/-0.234					
Batch	616259									
QC1201293432	181810008 DUP									
Nickel-63			U	-2.18	U	4.30	pCi/g	0 (0% - 100%) MXP1	03/10/07	18:51
				Uncert: +/-8.52	+/-8.68					
				TPU: +/-8.52	+/-8.68					
QC1201293434	LCS									
Nickel-63		578		503	pCi/g	87	(75%-125%)		03/10/07	19:24
				Uncert: +/-23.3						
				TPU: +/-29.6						
QC1201293431	MB									
Nickel-63			U	2.60	pCi/g				03/10/07	18:35
				Uncert: +/-8.30						
				TPU: +/-8.30						
QC1201293433	181810008 MS									
Nickel-63		585	U	-2.18	482	pCi/g	82 (75%-125%)		03/10/07	19:07
				Uncert: +/-8.52	+/-23.2					
				TPU: +/-8.52	+/-29.1					

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
 - BD Results are either below the MDC or tracer recovery is low
 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- QC Samples were not spiked with this compound

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QC Summary

Workorder: 181810

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

Y

^ 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.

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General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 184029
SDG: MSR#07-0144**

April 16, 2007

Laboratory Identification:

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

Summary

Sample receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 12, 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>
184029001	9514-0000-008F
184029002	9514-0000-016J
184029003	9514-0000-017J
184029004	9514-0000-018J
184029005	9514-0000-019B

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 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 16 April 2007

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

Chain of Custody and Supporting Documentation

Connecticut Yankee Atomic Power Company

Chain of Custody Form

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

No. 2007-00123

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 & SI-90	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													1840291	
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												
9514-0000-008F	4/10/07	1315	TS	G	BP	X								
9514-0000-016J	4/10/07	1318	TS	G	BP	X								
9514-0000-017J	4/10/07	1320	TS	G	BP	X								
9514-0000-018J	4/10/07	1323	TS	G	BP	X								
9514-0000-019B	4/10/07	1325	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-0144 <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.: 13° Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>					
1) Relinquished By <i>[Signature]</i>		Date/Time 4/11/07 0850	2) Received By <i>[Signature]</i>		Date/Time 4-12-07 915	Bill of Lading #								
3) Relinquished By		Date/Time	4) Received By		Date/Time									
5) Relinquished By		Date/Time	6) Received By		Date/Time									

Figure 1. Sample Check-in List

Date/Time Received: 4-12-07 . 915

SDG#: MSR#07-0144, 0145, 0146, 0148

Work Order Number: 184029, 184030, 184031, 184032

Shipping Container ID: 7907.1375.5631 Chain of Custody #: 2007-00123, 2007-00129, 2007-00124, 2007-00125

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 13° , 14°

5. Vermiculite/packing materials is: Wet Dry

6. Number of samples in shipping container: ^{T5} ~~8~~ 5, 17
₄₋₁₂₋₀₇

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: Tara St Date: 4-12-07 915

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

Fones

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCO/Work Order: <u>184029, 184030, 184031, 184032</u>
Date Received: <u>4-12-07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>TS</u>	<u>Clyde Jones</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 none other describe <u>See below</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>7907-1375 5631 13°</u> <u>7986 4952 6000 14°</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>600 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:

Initials CJ

Date: 4/12/07

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 184029**

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: 624979
Prep Batch Number: 624889

Sample ID	Client ID
184029001	9514-0000-008F
184029002	9514-0000-016J
184029003	9514-0000-017J
184029004	9514-0000-018J
1201313865	Method Blank (MB)
1201313866	184029004(9514-0000-018J) Sample Duplicate (DUP)
1201313867	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 14.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 184029004 (9514-0000-018J).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance.	Americium-241	184029002
		Bismuth-212	184029001
			184029004
		Cesium-134	184029003

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: 625519
Prep Batch Number: 624889

Sample ID	Client ID
184029005	9514-0000-019B
1201315240	Method Blank (MB)
1201315241	184030001(9803-0000-001F) Sample Duplicate (DUP)
1201315242	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 14.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 184030001 (9803-0000-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance.	Cesium-134	184029005 1201315241

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:	624917
Prep Batch Number:	624895
Dry Soil Prep GL-RAD-A-021 Batch Number:	624889

Sample ID	Client ID
184029001	9514-0000-008F
184029002	9514-0000-016J
184029003	9514-0000-017J
184029004	9514-0000-018J
184029005	9514-0000-019B
1201313721	Method Blank (MB)
1201313722	184029002(9514-0000-016J) Sample Duplicate (DUP)
1201313723	184029002(9514-0000-016J) Matrix Spike (MS)
1201313724	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: 184029002 (9514-0000-016J).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Sample 184029001 (9514-0000-008F) was recounted due to a negative result greater than three times the error.

Chemical Recoveries

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Samples were dried and reweighed due to low matrix spike recovery.

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: _____

Emilio Velasco 4/19/07

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#07-0144 GEL Work Order: 184029

The Qualifiers in this report are defined as follows:

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

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

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

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



Reviewed by

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: April 19, 2007

Client Sample ID:	9514-0000-008F	Project:	YANK01204
Sample ID:	184029001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	10-APR-07		
Receive Date:	12-APR-07		
Collector:	Client		
Moisture:	4.93%		

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		0.340	+/-0.133	0.0619	+/-0.133	0.124	pCi/g		MJH1	04/16/07	1041	624979
Americium-241	U	0.0597	+/-0.0868	0.0748	+/-0.0868	0.149	pCi/g					
Bismuth-212	UI	0.00	+/-0.220	0.162	+/-0.220	0.324	pCi/g					
Bismuth-214		0.340	+/-0.0907	0.0343	+/-0.0907	0.0686	pCi/g					
Cesium-134	U	0.0278	+/-0.0216	0.0206	+/-0.0216	0.0411	pCi/g					
Cesium-137	U	-0.00173	+/-0.023	0.0165	+/-0.023	0.0331	pCi/g					
Cobalt-60	U	-0.000512	+/-0.0252	0.0213	+/-0.0252	0.0425	pCi/g					
Europium-152	U	-0.0411	+/-0.0822	0.0448	+/-0.0822	0.0896	pCi/g					
Europium-154	U	0.0344	+/-0.0683	0.061	+/-0.0683	0.122	pCi/g					
Europium-155	U	0.0126	+/-0.0527	0.0483	+/-0.0527	0.0966	pCi/g					
Lead-212		0.413	+/-0.0655	0.0251	+/-0.0655	0.0501	pCi/g					
Lead-214		0.336	+/-0.076	0.0326	+/-0.076	0.0652	pCi/g					
Manganese-54	U	0.0217	+/-0.0218	0.0201	+/-0.0218	0.0402	pCi/g					
Niobium-94	U	0.015	+/-0.0207	0.0159	+/-0.0207	0.0317	pCi/g					
Potassium-40		9.20	+/-0.921	0.162	+/-0.921	0.324	pCi/g					
Radium-226		0.340	+/-0.0907	0.0343	+/-0.0907	0.0686	pCi/g					
Silver-108m	U	-0.0333	+/-0.0171	0.013	+/-0.0171	0.0259	pCi/g					
Thallium-208		0.148	+/-0.0447	0.0166	+/-0.0447	0.0332	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.0146	+/-0.0201	0.0202	+/-0.0201	0.0497	pCi/g	KSD1	04/19/07	1534	624917
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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	04/12/07	1115	624889

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: April 19, 2007

Client Sample ID: 9514–0000–008F
Sample ID: 184029001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid–ALL FSS			61		(25%–125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: April 19, 2007

Client Sample ID: 9514-0000-016J
Sample ID: 184029002
Matrix: TS
Collect Date: 10-APR-07
Receive Date: 12-APR-07
Collector: Client
Moisture: 3.93%

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		0.523	+/-0.194	0.0888	+/-0.194	0.178	pCi/g		MJH1	04/16/07	1042	624979
Americium-241	UI	0.00	+/-0.0395	0.0355	+/-0.0395	0.0709	pCi/g					
Bismuth-212	U	0.210	+/-0.298	0.235	+/-0.298	0.470	pCi/g					
Bismuth-214		0.311	+/-0.133	0.0386	+/-0.133	0.0771	pCi/g					
Cesium-134	U	0.0286	+/-0.0285	0.0274	+/-0.0285	0.0548	pCi/g					
Cesium-137	U	-0.00662	+/-0.0268	0.0221	+/-0.0268	0.0443	pCi/g					
Cobalt-60	U	0.0154	+/-0.0291	0.0263	+/-0.0291	0.0526	pCi/g					
Europium-152	U	-0.00187	+/-0.0784	0.0603	+/-0.0784	0.120	pCi/g					
Europium-154	U	0.0884	+/-0.0954	0.0891	+/-0.0954	0.178	pCi/g					
Europium-155	U	0.00293	+/-0.060	0.0547	+/-0.060	0.109	pCi/g					
Lead-212		0.479	+/-0.0848	0.0315	+/-0.0848	0.063	pCi/g					
Lead-214		0.421	+/-0.109	0.0433	+/-0.109	0.0864	pCi/g					
Manganese-54	U	0.00914	+/-0.0254	0.023	+/-0.0254	0.046	pCi/g					
Niobium-94	U	0.011	+/-0.0249	0.022	+/-0.0249	0.044	pCi/g					
Potassium-40		8.71	+/-1.08	0.184	+/-1.08	0.367	pCi/g					
Radium-226		0.311	+/-0.133	0.0386	+/-0.133	0.0771	pCi/g					
Silver-108m	U	-0.00814	+/-0.0229	0.0195	+/-0.0229	0.039	pCi/g					
Thallium-208		0.124	+/-0.0641	0.0202	+/-0.0641	0.0404	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	-0.0115	+/-0.0162	0.0147	+/-0.0162	0.0323	pCi/g		KSD1	04/16/07	2258	624917
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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	04/12/07	1115	624889

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: April 19, 2007

Client Sample ID: 9514-0000-016J
Sample ID: 184029002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			78		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: April 19, 2007

Client Sample ID: 9514-0000-017J
Sample ID: 184029003
Matrix: TS
Collect Date: 10-APR-07
Receive Date: 12-APR-07
Collector: Client
Moisture: 4.32%

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		0.615	+/-0.170	0.0613	+/-0.170	0.123	pCi/g		MJH1	04/16/07	1042	624979
Americium-241	U	0.0872	+/-0.113	0.0755	+/-0.113	0.151	pCi/g					
Bismuth-212	U	0.187	+/-0.216	0.131	+/-0.216	0.261	pCi/g					
Bismuth-214		0.432	+/-0.0914	0.0362	+/-0.0914	0.0724	pCi/g					
Cesium-134	UI	0.00	+/-0.0297	0.0244	+/-0.0297	0.0487	pCi/g					
Cesium-137	U	0.00734	+/-0.0223	0.0199	+/-0.0223	0.0398	pCi/g					
Cobalt-60	U	0.015	+/-0.0226	0.0208	+/-0.0226	0.0416	pCi/g					
Europium-152	U	0.0363	+/-0.0645	0.052	+/-0.0645	0.104	pCi/g					
Europium-154	U	0.0489	+/-0.0781	0.0706	+/-0.0781	0.141	pCi/g					
Europium-155	U	0.0606	+/-0.0551	0.0518	+/-0.0551	0.103	pCi/g					
Lead-212		0.464	+/-0.0754	0.0398	+/-0.0754	0.0795	pCi/g					
Lead-214		0.530	+/-0.0869	0.0355	+/-0.0869	0.0709	pCi/g					
Manganese-54	U	0.00402	+/-0.0221	0.0191	+/-0.0221	0.0382	pCi/g					
Niobium-94	U	0.00651	+/-0.0198	0.0176	+/-0.0198	0.0352	pCi/g					
Potassium-40		9.64	+/-1.05	0.181	+/-1.05	0.363	pCi/g					
Radium-226		0.432	+/-0.0914	0.0362	+/-0.0914	0.0724	pCi/g					
Silver-108m	U	0.0258	+/-0.0322	0.0177	+/-0.0322	0.0353	pCi/g					
Thallium-208		0.183	+/-0.0436	0.0182	+/-0.0436	0.0363	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		0.0573	+/-0.020	0.0116	+/-0.0201	0.0261	pCi/g		KSD1	04/16/07	2258	624917

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	04/12/07	1115	624889

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: April 19, 2007

Client Sample ID: 9514–0000–017J
Sample ID: 184029003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Surrogate/Tracer recovery	Test				Recovery%		Acceptable Limits						
Strontium Carrier		GFPC, Sr90, solid–ALL	FSS		78		(25%–125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: April 19, 2007

Client Sample ID: 9514-0000-018J
Sample ID: 184029004
Matrix: TS
Collect Date: 10-APR-07
Receive Date: 12-APR-07
Collector: Client
Moisture: 4.3%

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		0.426	+/-0.156	0.0577	+/-0.156	0.115	pCi/g		MJH1	04/16/07	1043	624979
Americium-241	U	0.0454	+/-0.0614	0.0523	+/-0.0614	0.105	pCi/g					
Bismuth-212	UI	0.00	+/-0.224	0.162	+/-0.224	0.323	pCi/g					
Bismuth-214		0.413	+/-0.0806	0.0274	+/-0.0806	0.0547	pCi/g					
Cesium-134	U	0.0263	+/-0.0228	0.0189	+/-0.0228	0.0378	pCi/g					
Cesium-137	U	-0.00417	+/-0.0182	0.0151	+/-0.0182	0.0302	pCi/g					
Cobalt-60	U	-0.00237	+/-0.0189	0.0156	+/-0.0189	0.0312	pCi/g					
Europium-152	U	-0.0408	+/-0.0513	0.0391	+/-0.0513	0.0781	pCi/g					
Europium-154	U	0.0285	+/-0.0592	0.0524	+/-0.0592	0.105	pCi/g					
Europium-155	U	-0.00628	+/-0.0469	0.0424	+/-0.0469	0.0847	pCi/g					
Lead-212		0.489	+/-0.0599	0.0234	+/-0.0599	0.0468	pCi/g					
Lead-214		0.457	+/-0.0794	0.0285	+/-0.0794	0.057	pCi/g					
Manganese-54	U	0.0114	+/-0.0183	0.0167	+/-0.0183	0.0334	pCi/g					
Niobium-94	U	0.00235	+/-0.0177	0.0151	+/-0.0177	0.0302	pCi/g					
Potassium-40		10.1	+/-0.938	0.110	+/-0.938	0.219	pCi/g					
Radium-226		0.413	+/-0.0806	0.0274	+/-0.0806	0.0547	pCi/g					
Silver-108m	U	-0.00456	+/-0.0162	0.014	+/-0.0162	0.0279	pCi/g					
Thallium-208		0.137	+/-0.0382	0.0153	+/-0.0382	0.0305	pCi/g					

Rad Gas Flow Proportional Counting

GFPC, Sr90, solid-ALL FSS

Strontium-90	U	0.0179	+/-0.0157	0.0114	+/-0.0158	0.0255	pCi/g		KSD1	04/16/07	2259	624917
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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	04/12/07	1115	624889

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: April 19, 2007

Client Sample ID: 9514-0000-018J
Sample ID: 184029004

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 Carrier		GFPC, Sr90, solid-ALL FSS			79		(25%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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

The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

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

Report Date: April 19, 2007

Client Sample ID: 9514-0000-019B
Sample ID: 184029005
Matrix: TS
Collect Date: 10-APR-07
Receive Date: 12-APR-07
Collector: Client
Moisture: 4.53%

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		1.08	+/-0.190	0.064	+/-0.190	0.128	pCi/g		MJH1	04/16/07	1356	625519
Americium-241	U	0.131	+/-0.0818	0.0703	+/-0.0818	0.141	pCi/g					
Bismuth-212		0.465	+/-0.378	0.151	+/-0.378	0.302	pCi/g					
Bismuth-214		0.762	+/-0.125	0.0368	+/-0.125	0.0736	pCi/g					
Cesium-134	UI	0.00	+/-0.0297	0.0253	+/-0.0297	0.0506	pCi/g					
Cesium-137	U	-0.0138	+/-0.0241	0.0196	+/-0.0241	0.0391	pCi/g					
Cobalt-60	U	0.0218	+/-0.0269	0.0207	+/-0.0269	0.0415	pCi/g					
Europium-152	U	-0.0305	+/-0.0682	0.0509	+/-0.0682	0.102	pCi/g					
Europium-154	U	-0.0734	+/-0.0754	0.0571	+/-0.0754	0.114	pCi/g					
Europium-155	U	-0.00189	+/-0.0643	0.0577	+/-0.0643	0.115	pCi/g					
Lead-212		1.01	+/-0.100	0.0268	+/-0.100	0.0536	pCi/g					
Lead-214		0.957	+/-0.121	0.0346	+/-0.121	0.0692	pCi/g					
Manganese-54	U	0.0339	+/-0.0265	0.0188	+/-0.0265	0.0376	pCi/g					
Niobium-94	U	0.0137	+/-0.027	0.0205	+/-0.027	0.0409	pCi/g					
Potassium-40		14.9	+/-1.31	0.161	+/-1.31	0.321	pCi/g					
Radium-226		0.762	+/-0.125	0.0368	+/-0.125	0.0736	pCi/g					
Silver-108m	U	0.00362	+/-0.0196	0.0172	+/-0.0196	0.0345	pCi/g					
Thallium-208		0.262	+/-0.0508	0.0187	+/-0.0508	0.0373	pCi/g					
Rad Gas Flow Proportional Counting												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90		0.0484	+/-0.0223	0.0138	+/-0.0223	0.0313	pCi/g		KSD1	04/16/07	2259	624917

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	04/12/07	1115	624889

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: April 19, 2007

Client Sample ID: 9514-0000-019B
Sample ID: 184029005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
Surrogate/Tracer recovery	Test				Recovery%	Acceptable Limits							
Strontium Carrier		GFPC, Sr90, solid-ALL FSS			69	(25%-125%)							

Notes:

The Qualifiers in this report are defined as follows :

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

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: April 19, 2007
Page 1 of 9

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Vorkorder: 184029

armname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
ad Gamma Spec											
atch	624979										
QC1201313866	184029004	DUP									
actinium-228		0.426		0.459	pCi/g	8		(0% - 100%)	MJH1	04/16/07	13:54
		Uncert:		+/-0.155							
		TPU:		+/-0.155							
mericium-241	U	0.0454	U	0.0245	pCi/g	60		(0% - 100%)			
		Uncert:		+/-0.0782							
		TPU:		+/-0.0782							
ismuth-212	UI	0.00		0.372	pCi/g	10		(0% - 100%)			
		Uncert:		+/-0.305							
		TPU:		+/-0.305							
ismuth-214		0.413		0.436	pCi/g	5		(0% - 100%)			
		Uncert:		+/-0.0924							
		TPU:		+/-0.0924							
esium-134	U	0.0263	U	0.0218	pCi/g	19		(0% - 100%)			
		Uncert:		+/-0.0339							
		TPU:		+/-0.0339							
esium-137	U	-0.00417	U	0.002	pCi/g	569		(0% - 100%)			
		Uncert:		+/-0.0195							
		TPU:		+/-0.0195							
obalt-60	U	-0.00237	U	-0.00244	pCi/g	3		(0% - 100%)			
		Uncert:		+/-0.0179							
		TPU:		+/-0.0179							
uropium-152	U	-0.0408	U	-0.00651	pCi/g	145		(0% - 100%)			
		Uncert:		+/-0.059							
		TPU:		+/-0.059							
uropium-154	U	0.0285	U	-0.00323	pCi/g	251		(0% - 100%)			
		Uncert:		+/-0.0585							
		TPU:		+/-0.0585							
uropium-155	U	-0.00628	U	0.0343	pCi/g	290		(0% - 100%)			
		Uncert:		+/-0.0513							
		TPU:		+/-0.0513							
ead-212		0.489		0.479	pCi/g	2		(0% - 100%)			
		Uncert:		+/-0.0617							
		TPU:		+/-0.0617							
ead-214		0.457		0.412	pCi/g	10		(0% - 100%)			
		Uncert:		+/-0.0797							
		TPU:		+/-0.0797							
anganese-54	U	0.0114	U	-0.000555	pCi/g	220		(0% - 100%)			
		Uncert:		+/-0.0208							
		TPU:		+/-0.0208							
liobium-94	U	0.00235	U	0.00242	pCi/g	3		(0% - 100%)			
		Uncert:		+/-0.0169							
		TPU:		+/-0.0169							

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 184029

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armname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
ad Gamma Spec									
atch	624979								
otassium-40		10.1	9.57	pCi/g	5		(0% - 20%)		
		Uncert: +/-0.938	+/-1.02						
		TPU: +/-0.938	+/-1.02						
adium-226		0.413	0.436	pCi/g	5		(0% - 100%)		
		Uncert: +/-0.0806	+/-0.0924						
		TPU: +/-0.0806	+/-0.0924						
ilver-108m	U	-0.00456	0.00556	pCi/g	2030		(0% - 100%)		
		Uncert: +/-0.0162	+/-0.0164						
		TPU: +/-0.0162	+/-0.0164						
hallium-208		0.137	0.154	pCi/g	12		(0% - 100%)		
		Uncert: +/-0.0382	+/-0.0393						
		TPU: +/-0.0382	+/-0.0393						
QC1201313867	LCS								
ctinium-228			0.936	pCi/g					04/16/07 13:55
		Uncert: +/-0.600	+/-0.600						
		TPU: +/-0.600	+/-0.600						
mericium-241	16.0		12.5	pCi/g		78	(75%-125%)		
		Uncert: +/-1.03	+/-1.03						
		TPU: +/-1.03	+/-1.03						
ismuth-212			2.48	pCi/g					
		Uncert: +/-1.35	+/-1.35						
		TPU: +/-1.35	+/-1.35						
ismuth-214			0.909	pCi/g					
		Uncert: +/-0.309	+/-0.309						
		TPU: +/-0.309	+/-0.309						
esium-134			0.190	pCi/g					
		Uncert: +/-0.0993	+/-0.0993						
		TPU: +/-0.0993	+/-0.0993						
esium-137	6.19		5.71	pCi/g		92	(75%-125%)		
		Uncert: +/-0.530	+/-0.530						
		TPU: +/-0.530	+/-0.530						
obalt-60	9.28		8.93	pCi/g		96	(75%-125%)		
		Uncert: +/-0.634	+/-0.634						
		TPU: +/-0.634	+/-0.634						
uropium-152			0.111	pCi/g					
		Uncert: +/-0.238	+/-0.238						
		TPU: +/-0.238	+/-0.238						
uropium-154			-0.0578	pCi/g					
		Uncert: +/-0.206	+/-0.206						
		TPU: +/-0.206	+/-0.206						
uropium-155			0.144	pCi/g					
		Uncert: +/-0.236	+/-0.236						
		TPU: +/-0.236	+/-0.236						
ead-212			0.682	pCi/g					
		Uncert: +/-0.242	+/-0.242						
		TPU: +/-0.242	+/-0.242						
ead-214			0.861	pCi/g					
		Uncert: +/-0.284	+/-0.284						

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 184029

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armname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
atch	624979								
Manganese-54	TPU:		+/-0.284						
		U	-0.0751	pCi/g					
	Uncert:		+/-0.0865						
	TPU:		+/-0.0865						
Lithium-94		U	-0.0344	pCi/g					
	Uncert:		+/-0.0846						
Potassium-40	TPU:		+/-0.0846						
		U	0.938	pCi/g					
	Uncert:		+/-1.03						
	TPU:		+/-1.03						
Radium-226			0.909	pCi/g			(75%-125%)		
	Uncert:		+/-0.309						
Silver-108m	TPU:		+/-0.309						
		U	0.0701	pCi/g					
	Uncert:		+/-0.0795						
	TPU:		+/-0.0795						
Thallium-208			0.372	pCi/g					
	Uncert:		+/-0.147						
	TPU:		+/-0.147						
		U	-0.02	pCi/g					04/16/07 13:54
QC1201313865 MB									
Tin-228	Uncert:		+/-0.0506						
	TPU:		+/-0.0506						
Mercurium-241		U	0.000275	pCi/g					
	Uncert:		+/-0.0504						
	TPU:		+/-0.0504						
		U	0.096	pCi/g					
Bismuth-212	Uncert:		+/-0.0927						
	TPU:		+/-0.0927						
Bismuth-214		U	0.0177	pCi/g					
	Uncert:		+/-0.045						
	TPU:		+/-0.045						
		U	0.00481	pCi/g					
Cesium-134	Uncert:		+/-0.0131						
	TPU:		+/-0.0131						
Cesium-137		U	-0.00391	pCi/g					
	Uncert:		+/-0.0132						
	TPU:		+/-0.0132						
		U	0.00699	pCi/g					
Cobalt-60	Uncert:		+/-0.0132						
	TPU:		+/-0.0132						
Europium-152		U	-0.00356	pCi/g					
	Uncert:		+/-0.0316						
	TPU:		+/-0.0316						
		U	-0.0281	pCi/g					
Europium-154	Uncert:		+/-0.0387						
	TPU:		+/-0.0387						
Europium-155		U	0.00361	pCi/g					

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 184029

Page 4 of 9

armname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
ad Gamma Spec											
atch	624979										
				Uncert:							
				TPU:							
ead-212			U	0.0167	pCi/g						
				Uncert:							
				TPU:							
ead-214			U	-0.0217	pCi/g						
				Uncert:							
				TPU:							
fanganese-54			U	-0.00843	pCi/g						
				Uncert:							
				TPU:							
liobium-94			U	0.00454	pCi/g						
				Uncert:							
				TPU:							
otassium-40			U	0.00683	pCi/g						
				Uncert:							
				TPU:							
adium-226			U	0.0177	pCi/g						
				Uncert:							
				TPU:							
ilver-108m			U	-0.00351	pCi/g						
				Uncert:							
				TPU:							
hallium-208			U	-0.00829	pCi/g						
				Uncert:							
				TPU:							
atch	625519										
QC1201315241 184030001 DUP											
ctinium-228		0.522		0.608	pCi/g	15		(0% - 100%)	MJH1	04/17/07	09:11
				Uncert:							
				TPU:							
mericium-241		0.026	U	0.032	pCi/g	21		(0% - 100%)			
				Uncert:							
				TPU:							
ismuth-212		0.00	UI	0.395	pCi/g	13		(0% - 100%)			
				Uncert:							
				TPU:							
ismuth-214		0.459		0.503	pCi/g	9		(0% - 100%)			
				Uncert:							
				TPU:							
esium-134		0.0223	U	0.00	pCi/g	85		(0% - 100%)			
				Uncert:							
				TPU:							
esium-137		0.0281	U	0.0107	pCi/g	89		(0% - 100%)			
				Uncert:							
				TPU:							
obalt-60		0.00538	U	-0.0142	pCi/g	443		(0% - 100%)			
				Uncert:							
				TPU:							

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

QC Summary

Vorkorder: 184029

Page 5 of 9

armname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
ad Gamma Spec											
atch 625519											
uropium-152		TPU:	+/-0.0175								
		U	0.0238	U	-0.0204	pCi/g	2660	(0% - 100%)			
		Uncert:	+/-0.0609		+/-0.0786						
uropium-154		TPU:	+/-0.0609		+/-0.0786						
		U	0.0124	U	0.019	pCi/g	42	(0% - 100%)			
		Uncert:	+/-0.0562		+/-0.070						
uropium-155		TPU:	+/-0.0562		+/-0.070						
		U	-0.0291	U	0.0775	pCi/g	440	(0% - 100%)			
		Uncert:	+/-0.0519		+/-0.0516						
ead-212		TPU:	+/-0.0519		+/-0.0516						
			0.547		0.488	pCi/g	12	(0%-20%)			
		Uncert:	+/-0.0594		+/-0.0792						
ead-214		TPU:	+/-0.0594		+/-0.0792						
			0.496		0.568	pCi/g	14	(0%-20%)			
		Uncert:	+/-0.0742		+/-0.101						
langanese-54		TPU:	+/-0.0742		+/-0.101						
		U	0.00646	U	0.00343	pCi/g	61	(0% - 100%)			
		Uncert:	+/-0.0156		+/-0.024						
liobium-94		TPU:	+/-0.0156		+/-0.024						
		U	0.0109	U	-0.014	pCi/g	1630	(0% - 100%)			
		Uncert:	+/-0.017		+/-0.0224						
otassium-40		TPU:	+/-0.017		+/-0.0224						
			12.0		11.2	pCi/g	6	(0% - 20%)			
		Uncert:	+/-0.987		+/-1.17						
adium-226		TPU:	+/-0.987		+/-1.17						
			0.459		0.503	pCi/g	9	(0% - 100%)			
		Uncert:	+/-0.0869		+/-0.121						
ilver-108m		TPU:	+/-0.0869		+/-0.121						
		U	0.00418	U	0.00558	pCi/g	29	(0% - 100%)			
		Uncert:	+/-0.0141		+/-0.0198						
hallium-208		TPU:	+/-0.0141		+/-0.0198						
			0.168		0.150	pCi/g	12	(0% - 100%)			
		Uncert:	+/-0.0297		+/-0.0478						
	TPU:	+/-0.0297		+/-0.0478							
QC1201315242	LCS										
ctinium-228				1.02	pCi/g					04/17/07	09:10
		Uncert:		+/-0.578							
		TPU:		+/-0.578							
mericium-241	16.0			14.0	pCi/g		87	(75%-125%)			
		Uncert:		+/-1.66							
		TPU:		+/-1.66							
ismuth-212			U	0.627	pCi/g						
		Uncert:		+/-0.764							
		TPU:		+/-0.764							
ismuth-214				0.624	pCi/g						
		Uncert:		+/-0.244							
		TPU:		+/-0.244							
esium-134			U	0.0266	pCi/g						

GEL LABORATORIES LLC

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

QC Summary

Vorkorder: 184029

Page 6 of 9

armname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
ad Gamma Spec										
atch	625519									
	Uncert:		+/-0.111							
	TPU:		+/-0.111							
Cesium-137	6.19		5.89	pCi/g		95	(75%-125%)			
	Uncert:		+/-0.546							
	TPU:		+/-0.546							
Cobalt-60	9.28		9.15	pCi/g		99	(75%-125%)			
	Uncert:		+/-0.717							
	TPU:		+/-0.717							
Europium-152		U	-0.142	pCi/g						
	Uncert:		+/-0.294							
	TPU:		+/-0.294							
Europium-154		U	-0.147	pCi/g						
	Uncert:		+/-0.283							
	TPU:		+/-0.283							
Europium-155		U	0.00105	pCi/g						
	Uncert:		+/-0.269							
	TPU:		+/-0.269							
Lead-212			0.937	pCi/g						
	Uncert:		+/-0.230							
	TPU:		+/-0.230							
Lead-214			0.665	pCi/g						
	Uncert:		+/-0.260							
	TPU:		+/-0.260							
Manganese-54		U	-0.0119	pCi/g						
	Uncert:		+/-0.0972							
	TPU:		+/-0.0972							
Biobium-94		U	-0.00404	pCi/g						
	Uncert:		+/-0.0942							
	TPU:		+/-0.0942							
Potassium-40		U	1.06	pCi/g						
	Uncert:		+/-1.02							
	TPU:		+/-1.02							
Radium-226			0.624	pCi/g			(75%-125%)			
	Uncert:		+/-0.244							
	TPU:		+/-0.244							
Silver-108m		U	-0.0182	pCi/g						
	Uncert:		+/-0.089							
	TPU:		+/-0.089							
Thallium-208			0.317	pCi/g						
	Uncert:		+/-0.187							
	TPU:		+/-0.187							
QC1201315240 MB										
Actinium-228		U	0.0048	pCi/g					04/17/07	09:11
	Uncert:		+/-0.108							
	TPU:		+/-0.108							
Americium-241		U	0.0157	pCi/g						
	Uncert:		+/-0.033							
	TPU:		+/-0.033							

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QC Summary

Vorkorder: 184029

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armname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
ad Gamma Spec atch 625519										
ismuth-212		U	0.107	pCi/g						
	Uncert:		+/-0.193							
	TPU:		+/-0.193							
ismuth-214		U	-0.00637	pCi/g						
	Uncert:		+/-0.0531							
	TPU:		+/-0.0531							
esium-134		U	0.00663	pCi/g						
	Uncert:		+/-0.0243							
	TPU:		+/-0.0243							
esium-137		U	-0.0133	pCi/g						
	Uncert:		+/-0.0269							
	TPU:		+/-0.0269							
obalt-60		U	-0.0238	pCi/g						
	Uncert:		+/-0.0262							
	TPU:		+/-0.0262							
uropium-152		U	-0.00193	pCi/g						
	Uncert:		+/-0.0671							
	TPU:		+/-0.0671							
uropium-154		U	0.0251	pCi/g						
	Uncert:		+/-0.0689							
	TPU:		+/-0.0689							
uropium-155		U	0.000307	pCi/g						
	Uncert:		+/-0.0525							
	TPU:		+/-0.0525							
ead-212		U	0.0203	pCi/g						
	Uncert:		+/-0.0405							
	TPU:		+/-0.0405							
ead-214		U	0.0266	pCi/g						
	Uncert:		+/-0.0659							
	TPU:		+/-0.0659							
anganese-54		U	-0.00236	pCi/g						
	Uncert:		+/-0.0236							
	TPU:		+/-0.0236							
francium-94		U	0.0103	pCi/g						
	Uncert:		+/-0.0279							
	TPU:		+/-0.0279							
otassium-40		U	-0.17	pCi/g						
	Uncert:		+/-0.297							
	TPU:		+/-0.297							
adium-226		U	-0.00637	pCi/g						
	Uncert:		+/-0.0531							
	TPU:		+/-0.0531							
ilver-108m		U	0.0101	pCi/g						
	Uncert:		+/-0.0222							
	TPU:		+/-0.0222							
hassium-208		U	-0.0122	pCi/g						
	Uncert:		+/-0.0295							
	TPU:		+/-0.0295							

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QC Summary

Vorkorder: 184029

Page 8 of 9

armname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
ad Gas Flow										
atch	624917									
QC1201313722	184029002	DUP								
trontium-90		U	-0.0115	U	-0.0163	pCi/g	0	(0% - 100%)	KSD1	04/16/07 22:58
		Uncert:	+/-0.0162		+/-0.0138					
		TPU:	+/-0.0162		+/-0.0138					
QC1201313724	LCS									
trontium-90			1.41		1.44	pCi/g	102	(75%-125%)		04/16/07 22:59
		Uncert:			+/-0.105					
		TPU:			+/-0.114					
QC1201313721	MB									
trontium-90				U	0.0164	pCi/g				04/16/07 22:58
		Uncert:			+/-0.0145					
		TPU:			+/-0.0145					
QC1201313723	184029002	MS								
trontium-90			1.59	U	-0.0115	pCi/g	77	(75%-125%)		04/16/07 22:58
		Uncert:	+/-0.0162		+/-0.102					
		TPU:	+/-0.0162		+/-0.109					

Notes:

The Qualifiers in this report are defined as follows:

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

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QC Summary

Vorkorder: 184029

Page 9 of 9

armname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
---------	-----	-------------	----	-------	------	------	-------	-------	------	------

/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.

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

ATTACHMENT 4A (PRELIMINARY DATA REVIEW)

Preliminary Data Review Form - Samples for the Sign Test

Survey Unit: 9514 0000
 Survey Unit Name: West Primary Parking Lot
 Classification: 3
 Survey Media: Soil
 Type of Survey: Final Status Survey
 Type of Measurement: Gross Measurement
 Number of Measurements: 15
 Operational DCGL: 1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60	Sr-90
Minimum Value:	-9.25E-03	-1.30E-02	-1.46E-02
Maximum Value:	9.54E-02	2.50E-02	3.59E-02
Mean:	2.72E-02	7.28E-03	7.35E-03
Median:	2.29E-02	7.60E-03	5.20E-03
Standard Deviation:	2.77E-02	1.07E-02	1.31E-02
Skew:	1.24E+00	-1.10E-01	7.30E-01

RADIONUCLIDE CONCENTRATION (pCi/g)

NUMBER	Cs-137	Co-60	Sr-90	Cs Identified?	Co Identified?	Sr Identified?
9514-0000-001F	4.22E-02	1.17E-02	7.52E-03	YES	NO	NO
9514-0000-002F	2.51E-02	1.40E-02	9.72E-03	YES	NO	NO
9514-0000-003F	1.83E-02	6.70E-03	4.68E-03	NO	NO	NO
9514-0000-004F	2.57E-02	4.04E-03	3.59E-02	NO	NO	YES
9514-0000-005F	2.59E-02	-5.42E-03	5.20E-03	NO	NO	NO
9514-0000-006F	7.25E-02	7.60E-03	7.99E-05	YES	NO	NO
9514-0000-007F	2.29E-02	-3.77E-03	3.04E-02	YES	NO	YES
9514-0000-008F	-1.73E-03	-5.12E-04	-1.46E-02	NO	NO	NO
9514-0000-009F	6.27E-03	2.24E-04	4.71E-03	NO	NO	NO
9514-0000-010F	1.41E-02	1.31E-02	-2.34E-03	NO	NO	NO
9514-0000-011F	4.48E-02	8.17E-03	9.49E-03	YES	NO	NO
9514-0000-012F	2.29E-02	2.10E-02	-9.25E-03	YES	NO	NO
9514-0000-013F	-9.25E-03	-1.30E-02	2.76E-03	NO	NO	NO
9514-0000-014F	9.54E-02	2.50E-02	9.02E-03	YES	NO	NO
9514-0000-015F	3.26E-03	2.04E-02	1.70E-02	NO	NO	NO

Performed By: Robert Massengill

Date: 4-24-07

Independent Review: [Signature]

Date: 4/26/07

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

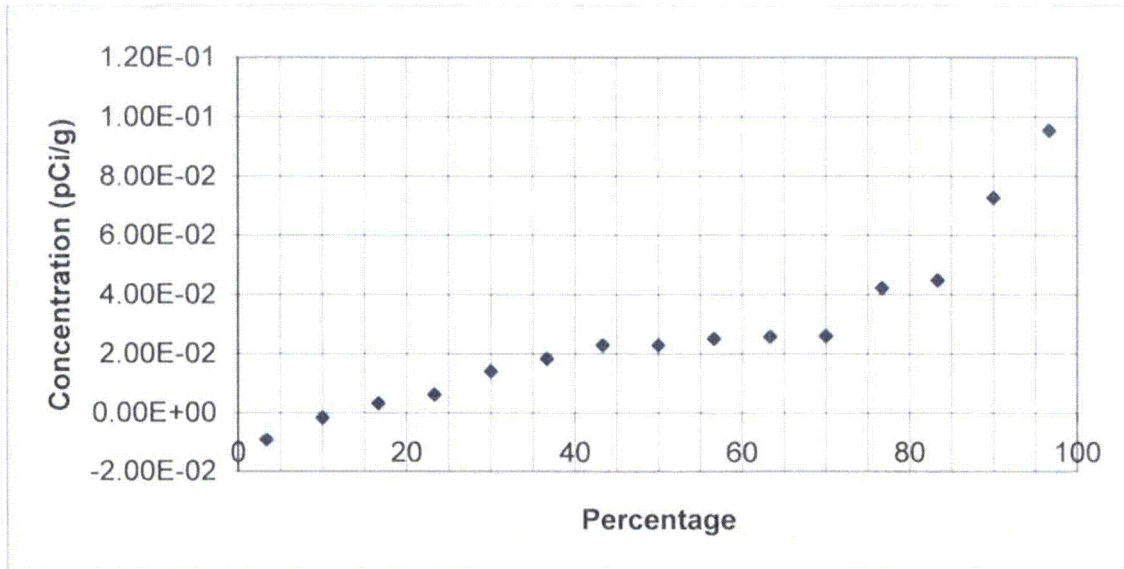
ATTACHMENT 4B (GRAPHICAL REPRESENTATION OF DATA)

Quantile Plot For Cesium - 137

Survey Unit: 9514-0000

Survey Unit Name: West Primary Parking Lot

Mean: 2.72E-02 pCi/g



Cs-137	Rank	Percentage
-9.25E-03	1	3 %
-1.73E-03	2	10 %
3.26E-03	3	17 %
6.27E-03	4	23 %
1.41E-02	5	30 %
1.83E-02	6	37 %
2.29E-02	7	43 %
2.29E-02	8	50 %
2.51E-02	9	57 %
2.57E-02	10	63 %
2.59E-02	11	70 %
4.22E-02	12	77 %
4.48E-02	13	83 %
7.25E-02	14	90 %
9.54E-02	15	97 %

Prepared By: Robert Massengill

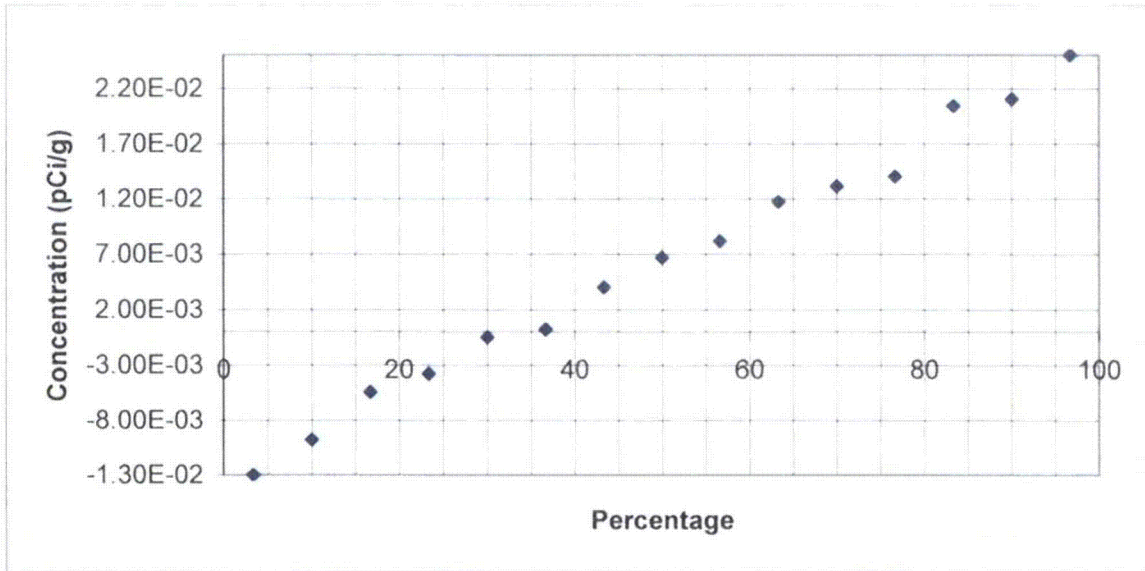
Reviewed By: [Signature]

Date: 4-24-07

Date: 4/26/07

Quantile Plot For Cobalt - 60

Survey Unit: 9514-0000
 Survey Unit Name: West Primary Parking Lot
 Mean: 7.28E-03 pCi/g



Co-60	Rank	Percentage
-1.30E-02	1	3 %
-9.79E-03	2	10 %
-5.42E-03	3	17 %
-3.77E-03	4	23 %
-5.12E-04	5	30 %
2.24E-04	6	37 %
4.04E-03	7	43 %
6.70E-03	8	50 %
8.17E-03	9	57 %
1.17E-02	10	63 %
1.31E-02	11	70 %
1.40E-02	12	77 %
2.04E-02	13	83 %
2.10E-02	14	90 %
2.50E-02	15	97 %

Prepared By: Robert Massicelli
 Reviewed By: [Signature]

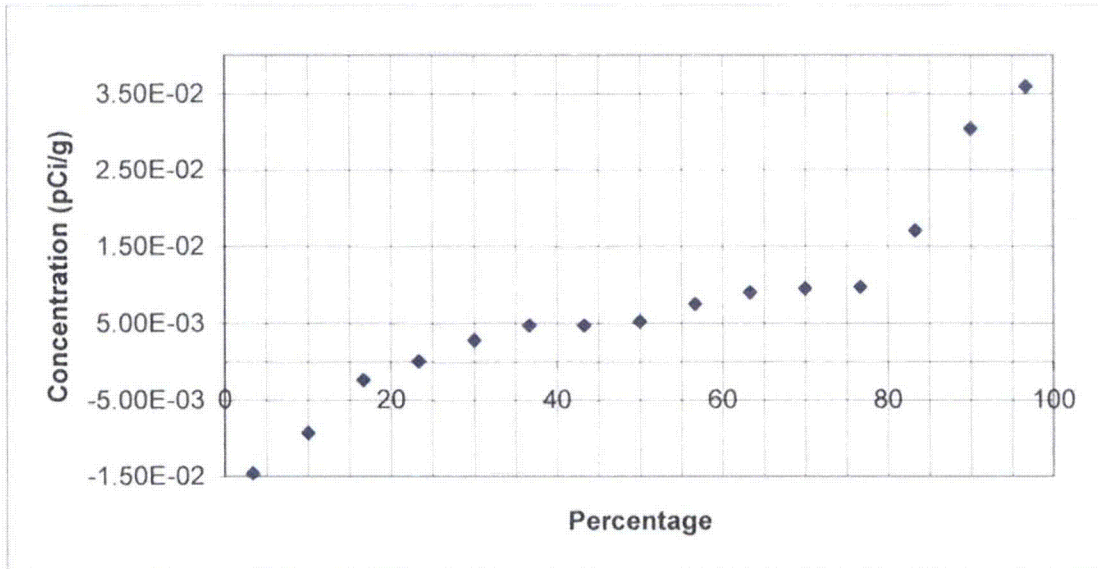
Date: 4-24-07
 Date: 4/26/07

Quantile Plot For Strontium-90

Survey Unit: 9514-0000

Survey Unit Name: West Primary Parking Lot

Mean: 7.35E-03 pCi/g



	Rank	Percentage
-1.46E-02	1	3 %
-9.25E-03	2	10 %
-2.34E-03	3	17 %
7.99E-05	4	23 %
2.76E-03	5	30 %
4.68E-03	6	37 %
4.71E-03	7	43 %
5.20E-03	8	50 %
7.52E-03	9	57 %
9.02E-03	10	63 %
9.49E-03	11	70 %
9.72E-03	12	77 %
1.70E-02	13	83 %
3.04E-02	14	90 %
3.59E-02	15	97 %

Prepared By: Robert Messeri

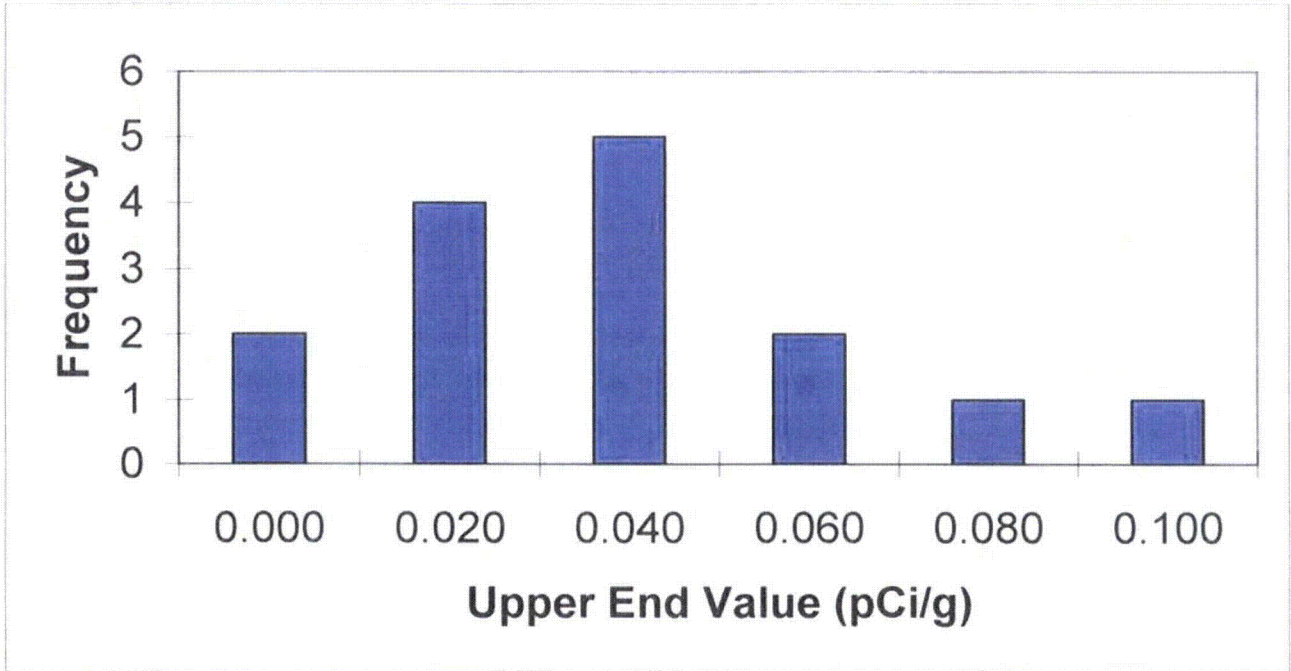
Reviewed By: [Signature]

Date: 4-24-07

Date: 4/26/07

Frequency Plot For Cesium-137

Survey Unit: 9514-0000
 Survey Unit Name: West Primary Parking Lot
 Mean: 0.027 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
0.000	2	13%
0.020	4	27%
0.040	5	33%
0.060	2	13%
0.080	1	7%
0.100	1	7%
Total	15	100%

Prepared By: Robert Masserill

Date: 4-24-07

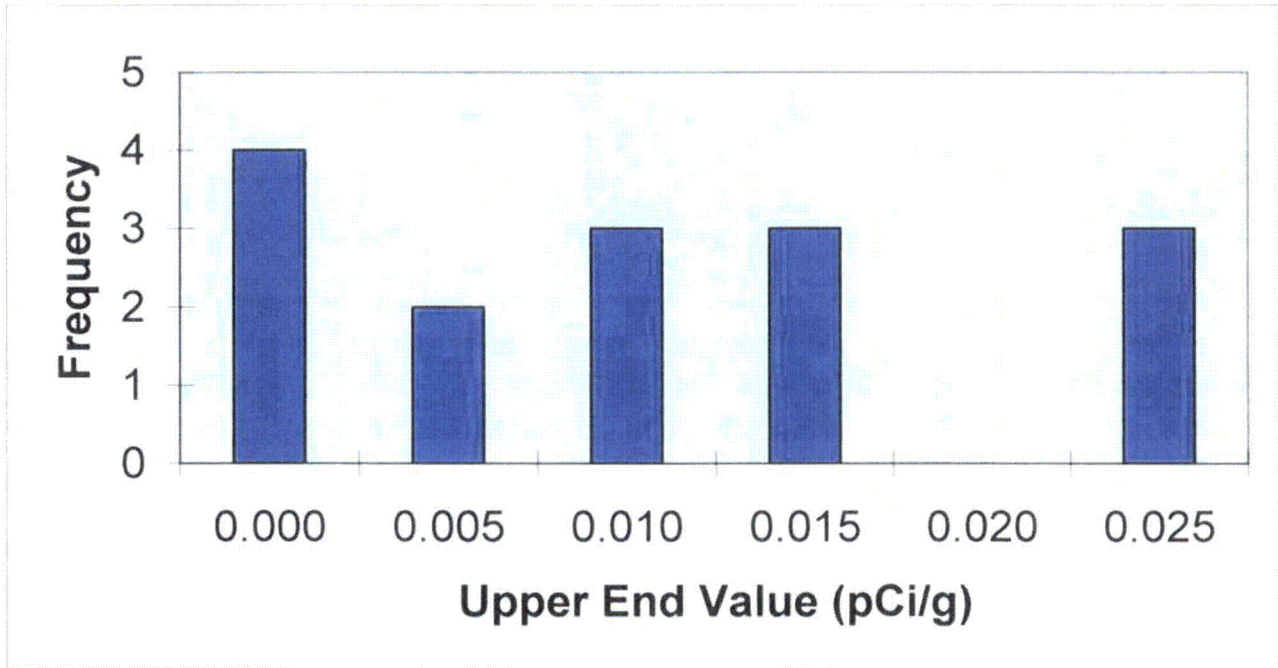
Reviewed By: [Signature]

Date: 4/26/07

Frequency Plot For Cobalt-60

Survey Unit: 9514-0000
 Survey Unit Name: West Primary Parking Lot

Mean: 0.007 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
0.000	4	27%
0.005	2	13%
0.010	3	20%
0.015	3	20%
0.020	0	0%
0.025	3	20%
Total	15	100%

Prepared By: Robert Masserelli

Date: 4-24-07

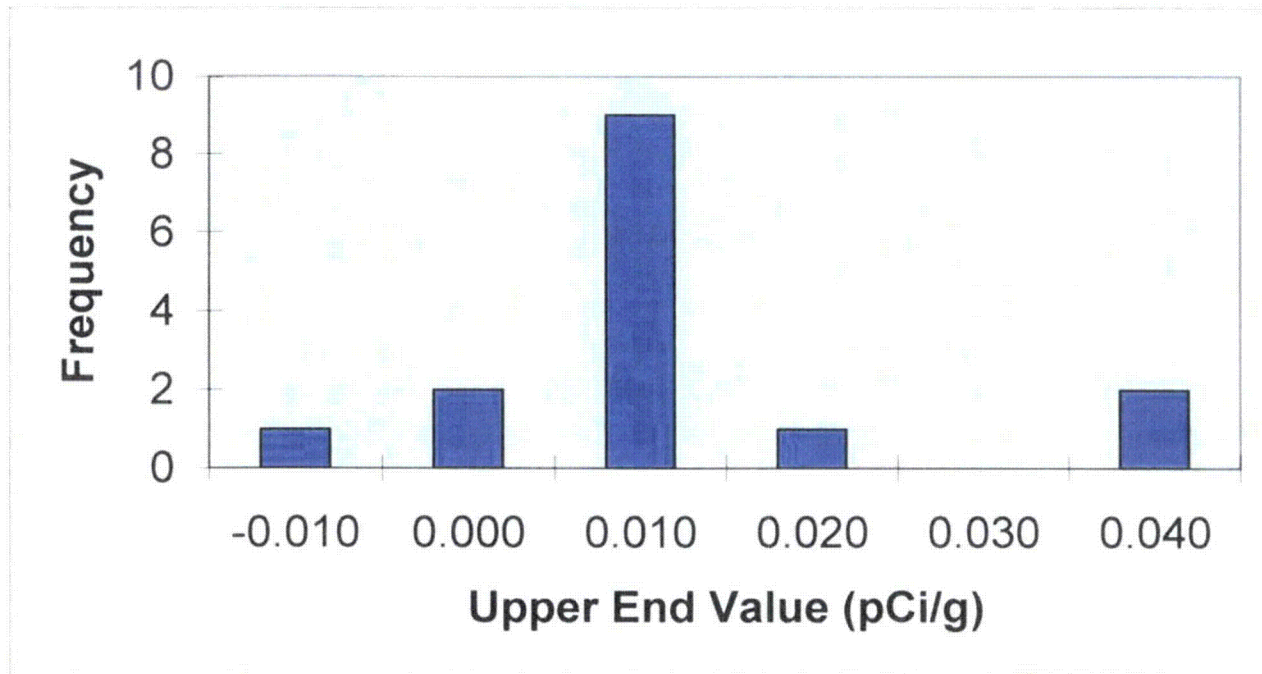
Reviewed By: [Signature]

Date: 4/26/07

Frequency Plot For Sr - 90

Survey Unit: 9514-0000
 Survey Unit Name: West Primary Parking Lot

Mean: 0.007 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
-0.010	1	7%
0.000	2	13%
0.010	9	60%
0.020	1	7%
0.030	0	0%
0.040	2	13%
Total	15	100%

Prepared By: Robert Massey

Date: 4-24-07

Reviewed By: [Signature]

Date: 4/26/07

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Unit Number: 9514-0000					
Survey Unit Name: West Primary Parking Lot					
WP&IR#: NA					
Classification : 3		TYPE I (α error):0.05		TYPE I (β error):0.05	
Radionuclides:			Cs-137	Co-60	Sr-90
Operational DCGL (pCi/g):			5.38	2.59	1.05
Results Cs-137	Results Co-60	Results Sr-90	Weighted Sum (W _s)	DCGL-Result	Sign
4.22E-02	1.17E-02	7.52E-03	1.95E-02	9.80E-01	1
2.51E-02	1.40E-02	9.72E-03	1.93E-02	9.81E-01	1
1.83E-02	6.70E-03	4.68E-03	1.04E-02	9.90E-01	1
2.57E-02	4.04E-03	3.59E-02	4.05E-02	9.59E-01	1
2.59E-02	-5.42E-03	5.20E-03	7.67E-03	9.92E-01	1
7.25E-02	7.60E-03	7.99E-05	1.59E-02	9.84E-01	1
2.29E-02	-3.77E-03	3.04E-02	1.67E-02	9.83E-01	1
-1.73E-03	-5.12E-04	-1.46E-02	2.40E-02	9.76E-01	1
6.27E-03	2.24E-04	4.71E-03	5.74E-03	9.94E-01	1
1.41E-02	1.31E-02	-2.34E-03	5.45E-03	9.95E-01	1
4.48E-02	8.17E-03	9.49E-03	2.05E-02	9.79E-01	1
2.29E-02	2.10E-02	-9.25E-03	3.56E-03	9.96E-01	1
-9.25E-03	-1.30E-02	2.76E-03	-4.11E-03	1.00E+00	1
9.54E-02	2.50E-02	9.02E-03	3.60E-02	9.64E-01	1
3.26E-03	2.04E-02	1.70E-02	2.47E-02	9.75E-01	1
Number of Positive Differences (S+):				15	

Critical Value: 13

Survey Unit: Meets Acceptance Criterion

Performed By: Robert Massengill

Date: 4-26-07

Independent Review: [Signature]

Date: 4/26/07

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

Split Sample Assessment Form

Survey Area#:	9514	Survey Unit #:	0000	Survey Unit Name:	West Primary Parking Lot			
Sample Plan or WPIR#:	NA			SML #:	0			
Sample Description: Comparison of split samples collected from sample measurement location #14 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9514-0000-014E</u> , the comparison sample was <u>9514-0000-014FS</u> .								
STANDARD					COMPARISON			
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	3.26E-03	1.17E-02	0	NONE -	1.13E-01	1.99E-02	34.66	NA
Co-60	2.04E-02	1.37E-02	1	NONE -	5.10E-04	1.32E-02	0.03	NA
K-40	1.33E+01	6.95E-01	19	0.75 - 1.33	1.22E+01	6.20E-01	0.92	Y
Comments/Corrective Actions: For both Cs-137 and Co-60, the resolution ratios are less than 4. The guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. K-40 was found to be present at an acceptable level of agreement. Therefore, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.			
					Resolution		Agreement Range	
					4	7	0.50	2.00
					8	15	0.60	1.66
					16	50	0.75	1.33
					51	200	0.80	1.25
					> 200		0.85	1.18
Performed By:			Date:		Reviewed By:			Date:
Robert Massery			4-24-07		[Signature]			4/26/07

WPIR – Work Plan and Inspection Record

SML – Sample Measurement Location designation

Split Sample Assessment Form

Survey Area#:	9514	Survey Unit #:	0000	Survey Unit Name:	West Primary Parking Lot			
Sample Plan or WPIR#:	NA			SML #:	0			
Sample Description: Comparison of split samples collected from sample measurement location #15 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9514-0000-015E, the comparison sample was 9514-0000-015FS.								
STANDARD					COMPARISON			
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	3.26E-03	1.17E-02	0	NONE -	4.12E-03	1.14E-02	1.26	NA
Co-60	2.04E-02	1.37E-02	1	NONE -	2.00E-02	1.12E-02	0.98	NA
K-40	1.19E+01	6.20E-01	19	0.75 - 1.33	1.22E+01	5.85E-01	1.03	Y
Comments/Corrective Actions: For both Cs-137 and Co-60, the resolution ratios are less than 4. The guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. K-40 was found to be present at an acceptable level of agreement. Therefore, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.			
					Resolution		Agreement Range	
					4	7	0.50	2.00
					8	15	0.60	1.66
					16	50	0.75	1.33
					51	200	0.80	1.25
					> 200		0.85	1.18
Performed By:				Date:	Reviewed By:			Date:
	Robert Massensill							4/26/07

WPIR - Work Plan and Inspection Record
SML - Sample Measurement Location designation

WEST PRIMARY PARKING LOT
SURVEY UNIT 9514-0000

RELEASE RECORD

ATTACHMENT 4E (COMPASS DQA WITH POWER CURVE)



DQA Surface Soil Report

Assessment Summary

Site: West primary parking lot
Planner(s): RWM
Survey Unit Name: 9514-0000
Report Number: 1
Survey Unit Samples: 15
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve

