Attachment H

Final Status Survey Report #8 Documentation

(UNDER SEPARATE COVER)

Final

COLUMBUS CLOSURE PROJECT CHARACTERIZATION AND FINAL STATUS SURVEY REPORT FOR THE JN-2 SANITATION LINE SECTIONS B AND C

Revision 1
June 16, 2006

Prepared by

ECC & E2 Closure Services
1425 State Route 142 East
West Jefferson, OH 43162

Contract Number: DE-AC24-04OH20171

FINAL Characterization and Final Status Report for the JN-2 Sanitation Line Sections B and C

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1.0 Introduction

This report contains the final status surveys (FSS) for the JN-2 Sanitation Line Sections B and C located at the Columbus Closure Project (CCP), 1425 State Route 142 East, West Jefferson, OH 43162. Final status surveys were conducted according to the guidance presented in the *Manual for Conducting Surveys in Support of License Termination*, NUREG/CR-5849 (NUREG/CR-5849) (ORAU, 1992) and the *Radiological Characterization and Final Status Plan for Battelle Columbus Laboratories Decommissioning Project, West Jefferson Site*, DD-97-02 (Final Status Plan) (Battelle, 2000). The final status surveys were conducted in July of 2005 and performed under Work Instruction 2806 (Closure Services, 2004).

The intent of this final status survey report is to provide a complete and unambiguous record of the radiological status of the JN-2 Sanitary Line sections B and C excavations. Sufficient information and data is provided to enable an independent re-creation and evaluation at some future date of both the survey activities and the reported results for the excavations. Information in this report is also available in referenced technical basis documents, final status survey plans and procedures, and the *Battelle Memorial Institute Columbus Operations, Decommissioning Plan*, DD-93-19 (BMI Decommissioning Plan), and reporting and quality assurance procedures.

To the extent practicable, this final status survey report is presented with minimal information incorporated by reference. This final status survey report has been generated following the comprehensive, annotated outline presented in Chapter 9 of NUREG-5849 (ORAU, 1992).

1.1 Background

On April 16, 1943, BMI, acting through what is now its Battelle Columbus Operations (BCO), entered into Contract No. W-7405-ENG-92 with the Manhattan Engineering District to perform atomic energy research and development (R&D) activities. BCO performed nuclear materials research and development at privately-owned facilities for the Manhattan Engineering District and its successor agencies – the Atomic Energy Commission (AEC), the Energy Research and Development Agency (ERDA), and the Department of Energy (DOE). Research and development continued until 1988 (Battelle, 2003a).

The BCO facilities at the King Avenue Site, Columbus, Ohio, and the West Jefferson North (WJN) and South (WJS) Sites, West Jefferson, Ohio, became partially radiologically contaminated as a result of the R&D activities. Decontamination of the King Avenue and WJS Sites has been completed and activities continue at the WJN site. The DOE, as the successor to the AEC and the Government's earlier work, is the agreed party with predominant liability and responsibility for decontamination and decommissioning (D&D) of the BCO facilities (Battelle, 2003a). The Assistant Secretary for Nuclear Energy of the DOE accepted the decontamination and decommissioning (D&D) of the WJN into the DOE's Surplus Facilities Management Program as a major project (DOE, 1986). The DOE is the

agency funding and managing the cleanup of the WJN (Battelle. 2003a). However, the site is not a DOE-owned facility.

BMI holds U.S. Nuclear Regulatory Commission (NRC) license number SNM-7. BMI has continually operated and conducted D&D activities in full compliance with this NRC license. The BMI Decommissioning Plan for the WJN site does not serve as a declaration to terminate SNM-7, but establish the criteria for performing D&D activities. The end goal of the BMI Decommissioning Plan is to reach unrestricted use conditions for the site (Battelle, 2003a).

The DOE has contracted ECC&E2 Closure Services, LLC (Closure Services) to safely remove DOE radioactive materials and contamination from the WJN site. Removal of radioactive material will be to levels allowing future use of the site without radiological restrictions as described in the BMI Decommissioning Plan. Closure Services has conducted characterization and final status surveys of the JN-2 Sanitation Line sections B and C excavations to demonstrate that the areas are available for unrestricted release.

2.0 Site Description

Created in 1984, the Battelle Columbus Decommissioning Project (BCLDP) is a remediation project that includes nine buildings at the King Avenue site and five at the WJN site. The CCP is the successor of the BCLDP. Three former research facilities, JN-1, JN-2, and JN-3 have been demolished as well as JN-6, the guard house. Building JN-4 and the WJN Well House are the only remaining structures at the WJN site. Several outfalls, filter beds, and wells are also located at the site. The JN-2 sanitary line connected buildings JN-2 and JN-3 to the sanitary filter beds. **Figure 1** presents a site map for the CCP.

2.1 Area Description

As shown in **Figure 1**, the sanitation line extended from the JN-2 North Side for roughly 60 feet then veered east for roughly 120 feet , where it intercepted a manway. From the manway, the sanitation line extended to the south and connected outside JN-1C. A second "dog leg" section of this line connected between JN-2 and JN-3. Portions of the line, to the north and west, from the intersection of C and D building connections have been removed since performing the final status survey. Section A of the line was excavated subsequent to the preparation of this report. **Figure 2** shows Sections B and C, representing the 200 feet of sanitation line that are covered by this final status survey.

Two classifications of areas are used in NUREG-5849 and are termed **affected** or **unaffected.** These classifications are defined as (NRC, 1992):

> **Affected Areas:** Areas that have potential radioactive contamination (based on plant operating history) or known radioactive contamination (based on past or preliminary radiological surveillance). This would normally include areas where radioactive materials were used and stored, where records indicate spills or other unusual occurrences that could have resulted in spread of contamination, and where radioactive materials were buried. Areas immediately surrounding or adjacent to locations where radioactive materials were used, stored, or buried are included in this classification because of the potential for inadvertent spread of contamination.
>
> **Unaffected Areas:** All areas not classified as affected. These areas are not expected to contain residual radioactivity, based on knowledge of site history and previous information.

Excavation of the JN-2 sanitation line B/C was conducted in both affected and unaffected areas according to the above definition. The base of the excavation 1-foot above and below the sanitary line was classified as affected. The sidewalls and overburden of the excavation were classified as unaffected.

Excavation trenching of Section B of the JN-2 sanitation line began at southwest corner of the JN-1 foundation slab and proceeded west toward the former building JN-2. Trenching of Section C of the line ran north along the west front of the JN-1 foundation. Excavation trench depths averaged greater than 10 feet. Characterization Technicians sampled and

scanned the overburden soils removed as the excavation proceeded. Overburden soils to a depth of 1 to 2 feet above the sanitation line were cast to the sides of the trench, sampled, and released as clean material. Soil and debris removed 1-foot above and below the sanitation line were segregated and disposed as low level waste.

Characterization Technicians then surveyed the base and sidewalls of the excavation with a shielded Ludlum Model 44-10 two-inch by two-inch sodium iodide detector with Eberline ESP-2 meter. Samples were also collected from the base and sidewalls of the excavation trench to demonstrate compliance to the unrestricted release criteria. **Photo 1** shows Section B of the excavation in relation to the surrounding area. **Photo 2** shows the cut of the excavation looking towards the west from the former Building JN-1 foundation.

Elevated radiation measurements were encountered while performing the exposure rate surveys and gamma walkover scans. Elevated background levels were due primarily to low level wastes staged throughout the site. These included:

- Low level wastes measuring greater than 50 millireontgen per hour (mRem/hr) on the east side of the Building JN-1 foundation (see **Photo 3**):
- LLRW intermodal containers staged north of the excavation;
- TRU Waste Pad operated by Battelle; and
- Waste staging area located on and adjacent to the foundation of the former Building JN-1.

Waste staging activities significantly impacted the ambient radiation fields experienced at the site. Routine site exposure rate surveys varied significantly depending on location and ongoing waste handling activities. Background exposure rates recorded at the time of the excavation of the JN-2 sanitation line B/C trench averaged 33 $\pm$ 37 microroentgen (μR/hr).

3.0 Decommissioning Activities

3.1 Decommissioning Objective

The objective of the final status survey performed on the JN-2 sanitation line B/C trench excavation was to statistically demonstrate compliance that the remediated area is free from residual radioactive contamination and suitable for unrestricted release. The excavations are determined to be free of residual radioactive contamination when remaining soil contamination levels are below those presented in DD-93-03, Rev. 0, "Volumetric Release Criteria Technical Basis Document for Battelle Columbus Laboratory Decommissioning Project" (Battelle, 1993A). **Table 1** presents the volumetric release criteria as presented in DD-93-03, Rev. 0.

4.0 Final Status Survey Procedures

Planning and implementation of the final status survey of the excavations adhered to the requirements of the Final Status Plan (Battelle, 2000) and Work Instruction 2806 (CS, 2004)

4.1 Sampling Parameters

Final status samples of the JN-2 sanitation line B/C trench were taken by dividing the trench into sections and collecting samples from the overburden, trench side walls, and the trench base in accordance with WI-2806. See **Figure 2**. Analyses of samples by gamma spectroscopy were performed by the on-site Radioanalytical Laboratory (RAL).

4.2 Major Contaminants Identified

The characterization of the JN-2 sanitation line B/C trench soils identified Cesium-137 as the primary radiological contaminant of concern (RCOC). Other RCOCs included Cobalt-60 (Co-60), Europium-152 (Eu-152), Eu-154, Americium-241 (Am-241), Strontium-90 (Sr-90), Plutonium-238 (Pu-238), and Pu-239. Cs-137 is used as a surrogate for the other RCOC present in the soils as it typically accounts for 64 percent of the total isotopic activity. Further, the release criteria set for Cs-137 is considered conservative for the decommissioning activities. The surrogate relationship of Cs-137 to other RCOCs was calculated using data presented in **Table 2**.

Table 2 presents the isotopic quantity and activity concentrations of samples collected from the filter bed area by BMI from March through September 2000. These data are not associated with the excavation of the sanitation line. Average activities for the multiple samples were calculated for each RCOC prior to setting the ratios against Cs-137.[1] For each RCOC, the average activity concentration was set as a ratio against the average Cs-137 activity concentration as obtained from previous actions at the filter beds. Cs-137 activity ratios for each RCOC utilized to calculate the RCOCs for the JN-2 sanitation line B/C trench sections B and C are presented at the lower portion of **Table 2**.

4.2.1 Guidelines Established

Table 1 presents the guidelines for residual radioactivity concentrations for soil and solid volumes as applied to the excavation tasks covered by this report. Criteria for residual radioactivity concentrations in soil are defined in "Volumetric Release Criteria Technical Basis Document for Battelle Columbus Laboratories Decommissioning Project," DD-93-03, (Battelle, 1993). **Table 1** values have been generated primarily from various regulatory

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[1] Battelle, *Radiological Status of Abandoned Filter Bed Presentation*, http://www.ohio.doe.gov/ccp_seb/. Posted 7/15/2003. Presentation provided by DOE to the CCP website. Page titled "Radioactive Inventory of the Abandoned North Filter Beds & Limit Fractions" contains sampling data obtained from March through September 2000 from the filter beds. Average Cs-137 ratios were utilized to calculate the activity concentrations of the isotopes of concern.

requirements. technical documents, and from soil guidelines generated by computer pathway analyses. Requirements such as those found in DOE Order 5400.5 have been incorporated into the volumetric release criteria. DOE Order 5400.5. Section IV.a.2, provides generic guidelines for residual concentrations of Ra-226, Ra-228, Th-230, and Th-232 that have been incorporated into the volumetric release criteria. Additionally, NRC Guidance has been received by the CCP establishing the soil radioactivity concentration guidelines for Co-60, Sr-90, Cs-137, Ra-226, and Ra-228, and for natural, enriched and depleted uranium.

Compliance to the cleanup criteria presented in **Table 1** is demonstrated through a "fraction of limit." The total quantity and activity concentration of each RCOC is calculated using the average isotopic ratio listed in **Table 2**, with the exception of Plutonium (Pu)-241 (Battelle, 2003b). Pu-241 is calculated by applying a ratio to sum of Pu-238 and Pu-239 (obtained from ORIGEN 2.1 derived values. Battelle, 2003b). Calculated results for Co-60, Cs-137, Sr-90, Eu-152 and 154, Pu-239, 240 and 241, and Am-241 are then compared to the respective release criteria and a "fraction of the limit" is calculated. The "fraction of the limit" is determined by summing the ratios of each isotopic concentration to the respective release limit. Summed ratios must be less than one to meet sample release criteria. A modified screening criteria of 11 pCi/g for Cs-137 has been calculated using the "fraction of the limit" obtained from the filter bed surrogate ratio.

Exposure rates were compared to the 5 μR/hr above mean background limit listed in DD-97-02, Rev. 0 (Battelle. 2000). Survey measurements are those 1-meter above the ground surface. The calculated mean background exposure rate and the 95 percent confidence intervals used for the CCP open area grounds is 8 ± 2 μR/hr. Compliance to the limit is met when the exposure rate survey is less then or equal to the limits of NUREG-5849. Initial compliance screening is met if individual exposure rates are less than or equal to 13 μR/hr. Further assessment of compliance allows for exposure rates to be averaged of a 100 m^2 grid area to meet the limit of less than or equal to 5 μR/hr above background at 1-meter above the ground surface. Additionally, exposure rates over any discreet area may not exceed 5 μR/hr above background.

Data collected from trench-like culverts located on Battelle property unassociated with site operations indicate a geometry effect, increasing the background exposure rates inside the trenches by 3 to 5 μR/hr. Trench exposure rate measurements must be less than or equal to 18 μR/hr. The same compliance assessment is applied to these measurements as stated above.

5.0 Equipment and Procedures

5.1 Equipment

Survey instruments sensitive to gamma radiation are used to monitor excavation surfaces for residual radioactive materials. Ludlum Model 44-10 two-inch by two-inch sodium iodide detectors with Eberline ESP-2 meters were used to scan the excavations. Ludlum Model 19 exposure rate meters were used to obtain μR/hr measurements.

Instrumentation used in the Onsite Radioanalytical Laboratory (RAL) to support the final status survey included the following:

- VMS based Canberra Procount data acquisition system in conjunction with high purity germanium detectors for gamma spectroscopy of soil samples.
- Tennelec Model LB5100 Simultaneous Alpha and Beta Gas Proportional Counter to count smear samples

5.2 Scanning Minimum Detectable Activities

Scanning minimum detectable concentrations (MDC_{scan}) is determined to demonstrate that the MDC_{scan} is less than the modified Cs-137 screening criteria. The MDC_{scan} is calculated utilizing the methodology described in NUREG-1507 and the background count rate and a default detector response to Cs-137 (NRC, 1998). The calculation of the MDC_{scan} for walkover surveys applies a d' of 1.38 and a surveyor efficiency of 0.5. Ambient background in the area during the characterization and final status surveys was 25,000 counts per minute (cpm) for an un-shielded detector. For this particular area, the JN-2 sanitation line B/C trench, the background was significantly elevated due to the storage of radioactive materials near to the excavation. The following is the calculation of the MDC_{scan} for an un-shielded dectector:

b_i	=	(25.000 cpm) x (1 sec) x (1 min/60 sec)	=	417 counts
MDCR	=	(1.38) x ($\sqrt{417}$) x (60 sec/1min)	=	1691 cpm
$MDCR_{surveyor}$	=	1691 cpm / $\sqrt{0.5}$	=	2391 cpm
MDER	=	2391 cpm/(900 cpm/ uR/hr)	=	2.66 μR/hr

$$MDC_{scan} = (5pCi/g) * \frac{2.66\mu R/hr}{1.307\mu R/hr} = 10.18pCi/g$$

As described in section 3.2 of Work Instruction 2806, in order to detect Cs-137 at 75% of the cleanup criteria, the background count rate of the 2" x 2" detector must be less than 20,000 cpm (CS, 2004). Where the background count rate exceeds 20,000 cpm, the use of a

collimator may be necessary. Also, as stated in the attachment to WI-2806, "The use of collimators for shielding detector in areas of elevated backgrounds is acceptable. The collimation shields the sides and not the bottom of the detector. Collimating the detector orients the "view" to the ground surface, while minimizing the impact of lateral sources of ambient radiation. Collimating detectors will typically reduce background radiation fields by a factor of ten" (CS, 2004).

The MDC_{scan} was calculated using a background count rate of 4,200 cpm for a shielded detector. The calculation is as follows:

b_i	=	(4,200 cpm) x (1 sec) x (1 min/60 sec)	=	70 counts
MDCR	=	(1.38) x ($\sqrt{70 counts}$) x (60 sec/1min)	=	693 cpm
$MDCR_{surveyor}$	=	693 cpm / $\sqrt{0.5}$	=	980 cpm
MDER	=	980 cpm / (900 cpm/μR/hr)	=	1.09 μR/hr
MDC_{scan}	=	$(5 pCi/g) * \frac{1.09 \mu R/hr}{1.307 \mu R/hr} = 4.17 pCi/g$		

5.3 Procedures

The Characterization Team was formally trained and qualified to applicable procedures prior to the initiation of the characterization and final status surveys. Documentation of training is maintained by CCP Project Records.

The following plans and procedures were utilized for the surveys:

DD-93-19	Decommissioning Plan, Battelle Memorial Institute Columbus Operations. Revision 5, October 2003
DD-97-02	Radiological Characterization and Final Status Plan for BCLDP West Jefferson Site, Revision 0, March 2000
SC-SP-002	Facility Post-Decontamination Final Status Survey for Baseline Areas, Rev. 0
SC-SP-004.2	Manual and Mechanical Collection of Surface and Subsurface Soil Samples in Support of Site Characterization, Revision 3. November 2000
HP-OP-100	Operation and Calibration of the Eberline Model ESP-2 Survey Meter, Rev. 4, 1999
WI-2806	Excavation and Trench Sampling and Surveys, Revision 1, September 2004

6.0 Survey Findings

6.1 Exposure Rate Surveys

The calculated mean background exposure rate at the 95 percent confidence interval used for the CCP open grounds at 1-meter above surface is 8 ± 2 μR/hr. The exposure rate readings for the excavations are presented in the **Table 3** and **Table 4**. Exposure rate readings were individually compared to the mean background value of 8 ± 2 μR/hr to demonstrate compliance with the 5 μR /hr above background release criterion; *i.e.* grounds exposure rate surveys must be equal to or less than 13 μR/hr to be compliant, while exposure rates in trenches must be equal to or less than 18 μR/hr.

One meter above ground surface measurements of sanitation line trenches (B-C) excavation averaged between 23 uR/hr and 28 uR/hr. Ambient background exposure rates at the time of the excavation varied significantly, with an average of 33 ± 37 μR/hr. The higher exposure rate average occurred in section B of the trench and the lower average in section C of the trench. Exposure rate survey data showed a steady increase as the trenches approached the JN-1 foundation area. The increased exposure rate in the area is directly attributable to the area's proximity to the JN-1 foundation area, roughly 60 feet away. Increased ambient radiation fields were impacted by the staged LLRW (Low Level Radioactive Waste) on the east side of the JN-1 foundation. The minimum exposure rate measurement of the sanitation line trenches (B-C) excavations was 20 μR/hr and the maximum was 38 μR/hr.

Further assessment of the exposure rate readings using the NUREG/CR-5849 guidance was not performed because of the elevated background levels.

In February of 2006, Characterization Technicians performed exposure rate surveys of the inside of the restricted area of the WJN site. Exposure rate surveys were performed following site restoration and removal of staged LLRW. The average one meter above ground surface measurement within the restricted area was 7.1μR/hr, the minimum measurement was 3 μR/hr and the maximum measurement was 11μR/hr. Exposure rates at one meter above the ground surface of the restored land surface of the JN-2 sanitary line excavation averaged 6.8 μR/hr. The minimum measurement was 3 μR/hr, the maximum measurement was at 8μR/hr. **Table 22** presents the exposure rate surveys of the grids covering the excavation.

6.2 Scanning Measurements

Scanning measurements were performed with a two inch by two inch sodium iodide detector in accordance with section 6.3.1 of DD-97-02 (Battelle, 2000). Measurements were performed for the entire excavation of the sanitation line trenches (B-C).

The decision level value (DLV) for the scanning for a un-shielded detector of open grounds and trenches is set at 18,374 cpm for final status surveys at the CCP. The DLV for the scanning of open grounds and trenches using a shielded detector of open grounds and trenches is set at 4,236 cpm. The DLV is the mean background plus the MDA of the scanning instruments. Scanning surveys of an area that exceed the DLV require additional radiological measurements. DD-97-02 requires that soil samples be collected at each location where the DLV is exceeded (Battelle. 2000).

The JN-2 sanitation line excavation surveys exceeded the DLVs for scanning performed with a shielded and unshielded detector. Scanning measurements exhibited similar increase in count rate in areas of increasing external exposure rate. Scanning results for these areas are located in **Table 5** and **Table 6**. Characterization Technicians performed additional sampling of the area according to DD-97-02 (Battelle. 2000).

Increase in count rates were attributed to the radiation source terms of staged LLRW as discussed in Section 2.1 of this report. Decommissioning Crews attempted to shield staging areas using concrete barriers. lead blankets, and baker tanks filled with water. Attempts to lower the ambient background to levels meeting the DLVs were unsuccessful.

6.3 Excavation Sampling

The JN-2 sanitation line trenches (B-C) were surveyed and sampled in accordance with WI-2806 which included sampling of overburden, trench side walls and the trench bottom. Sample results of the Sanitation Line Trench. by Section, are provided in: **Tables 7** through **Table 14**.

Cesium-137 is utilized as a surrogate for determining compliance to the cleanup criteria presented in **Table 1**. Section 4.2.1 discusses the development of the Cs-137 surrogate and the application of **Table 1**.

The modified screening criteria of 11 pCi/g for Cs-137 is used to evaluate initial compliance to the cleanup levels. Further remediation is typically conducted if reported Cs-137 activity concentrations approach or exceed the modified screening criteria of 11 pCi/g. The "fraction of limit" calculation is applied to reported analytical results of samples with Cs-137 activity concentrations greater than 4 pCi/g.

The "fraction of limit" calculation was not performed for the JN-2 sanitation line B/C trench as all reported results were less than 4 pCi/g for Cs-137. Maximum reported Cs-137 activity of the base and sidewalls soil sample were 4.84E-02 pCi/g and 3.93E-02 pCi/g. respectively. The following is a summary table of the Cs-137 results for these two areas:

Location	Number of Samples	Average (pCi/g)	Standard Deviation (pCi/g)	Range (pCi/g)	Comparison Value (pCi/g)	Modified Screening Criteria (pCi/g)
Sanitation Line Trench Base (sections B-C)	60	2.86E-02	0.01	1.41E-02 to 4.84E-02	N/A	11
Sanitation Line Trench Sidewalls (sections B-C)	20	2.20E-02	0.01	1.52E-02 to 3.93E-02	0.03	11

Statistical analyses were performed on the sidewall sample data in accordance with Section 6.4.3 of DD-97-02, Rev. 0. as provided by NUREG/CR-5849, §8.5 (Battelle. 2000). As stated in §8.5, the EPA has recommended applying the calculated value of μ_α, relative to a guideline value, at a desired level of confidence. The value of μ_α is compared to the guideline value; if the μ_α is less than the guideline. the area meets the guideline at a 95% confidence level. This in turn means that the probability is less than 5% that the μ_α. will pass the test. when the true mean activity level exceeds the guideline value (ORAU, 1992). The μ_α value, or comparison value, is calculated as follows:

Comparison Value Equation: $\mu_\alpha = \bar{x} + t_{1-\alpha,df} \frac{s_x}{\sqrt{n}}$

The calculated comparison value for Cs-137 of 0.03 pCi/g, was less than the modified cleanup criteria of 11 pCi/g. **Table 15** presents the comparison value calculation for the trench sidewalls.

6.4 Overburden Sampling

Samples were taken from the excavation overburden, "A" and "B" in accordance with Section 6.4.3 of DD-97-02, Rev. 0 and Work Instruction 2806. Summary tables of the Cs-137 results in relation to the sample locations are presented as **Tables 16** through **Table 19**.

The following is a summary table of the Cs-137 results.

Location	Number of Samples	Average (pCi/g)	Standard Deviation (pCi/g)	Range (pCi/g)	Comparison Value (pCi/g)	Modified Screening Criteria (pCi/g)
Sanitation Line Overburden A Soil (B – C)	20	4.35E-02	0.02	1.80E-02 to 8.71E-02	0.05	11
Sanitation Line Overburden B Soil (B – C)	20	3.32E-02	0.01	1.75E-02 to 3.05E-02	0.04	11

Statistical analyses were performed on the overburden sample data. Overburden "A" and Overburden "B", in the same manner as Section 6.2 of this document. The calculation of the

Cs-137 comparison values, 0.05 and 0.04 pCi/g, were less than the modified Cs-137 screening criteria of 11 pCi/g. The comparison values are presented as **Table 20** and **Table 21**.

7.0 Conclusions

The characterization and final status survey results demonstrate that the radiological endpoint criteria objectives of the NRC-approved Decommissioning Plan have been met for the excavation addressed by this effort. (Battelle. 2003) Reported analytical results for media samples obtained from the excavation and overburden are below the residual radioactivity concentrations for soil and solid volumes as presented in **Table 1**.

Remaining soil contamination levels are below those presented in DD-93-03, Rev. 0, "Volumetric Release Criteria Technical Basis Document for Battelle Columbus Laboratory Decommissioning Project" (Battelle. 1993). The decommissioning objective has been satisfied. The final status survey performed on the JN-2 Sanitation Line Sections B and C statistically demonstrates that the remediation of the area was successful and that the excavations are free from residual radioactive contamination making them suitable for unrestricted release.

8.0 References

Battelle, 2003a. "Decommissioning Plan for the Battelle Memorial Institute Columbus Operations," DD-93-19.

Battelle, 2003b. Radiological Status of Abandoned Filter Bed Presentation, http://www.ohio.doe.gov/ccp_seb/, Posted 7/15/2003. Presentation provided by DOE to the CCP website. Page titled "Radioactive Inventory of the Abandoned North Filter Beds & Limit Fractions" contains sampling data obtained from March through September 2000 from the filter beds. Average Cs-137 ratios were utilized to calculate the activity concentrations of the isotopes of concern.

Battelle, 2003c. Waste Characterization, Classification, and Shipping Support Technical Basis Document. Rev. 5 for BCLDP West Jefferson Facility, November 2003. Isotopic mixture for Pu-241 is calculated using the values obtained from the ORIGEN2.1-derived data values presented in the technical basis document.

Battelle, 2000. "Radiological Characterization and Final Status Survey Plan for Battelle Columbus Laboratory Decommissioning Project West Jefferson Site." DD-97-02.

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U.S. Department of Energy (DOE), 1990. Finding of No Significant Impact, Decontamination and Decommissioning of the Battelle Columbus Laboratories in Columbus and West Jefferson, Ohio.

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U.S. Nuclear Regulatory Commission (NRC), 1998. "Minimum Detectable Concentrations With Typical Radiation Survey Instruments for Various Contaminants and Field Conditions" NUREG-1507.

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Figures

Figure 1
Site Map

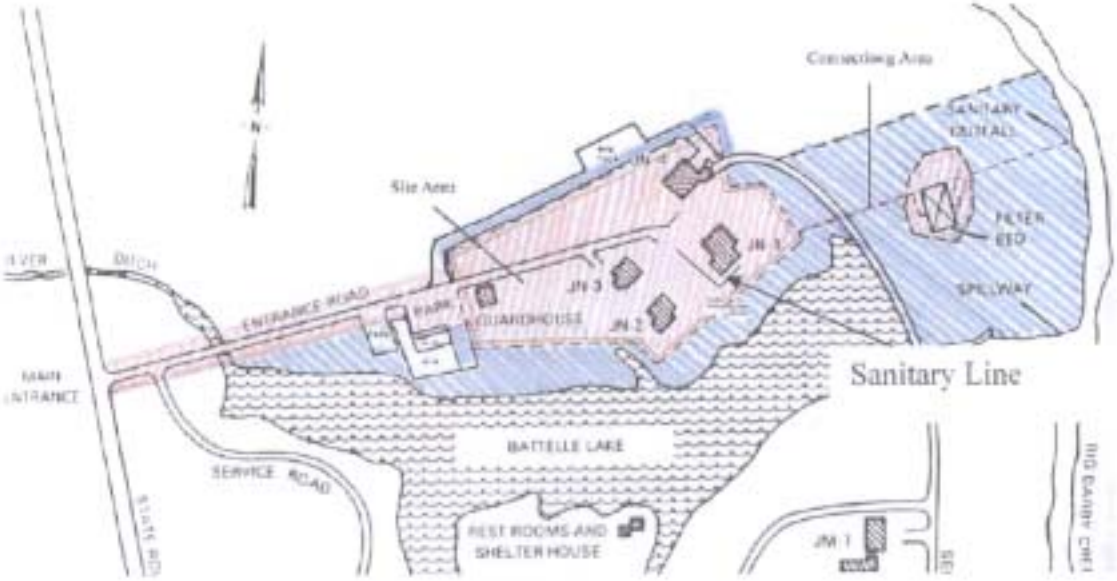
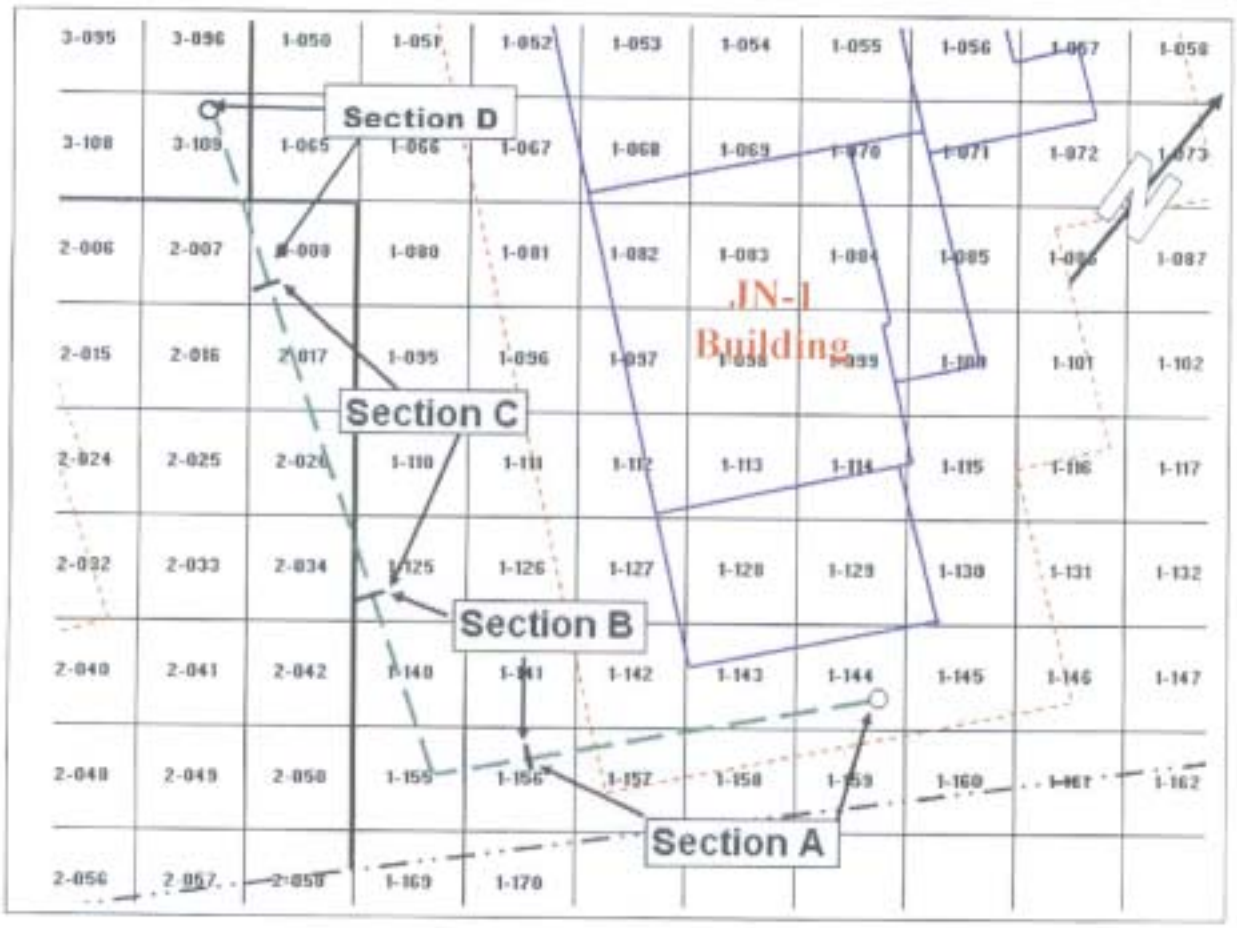


Figure 2

JN-2 Sanitation Line Location Map



Note: Section A and D out of scope for this FSS.

Photos

Photo 1, Excavation of Section B of JN-2 sanitation line

Photo 2, Section B of JN-2 Sanitation Line Trench

Photo 3, LLRW Staging Area East of JN-1 Foundation

Tables

Table 1
BCLDP GUIDELINES FOR RESIDUAL
RADIOACTIVITY CONCENTRATIONS FOR SOIL AND SOLID VOLUMES

Radionuclide[a]	King Avenue Concentration (pCi/g)[b]	West Jefferson Concentration (pCi/g)[b]
Natural Uranium	10[1]	na[c]
Enriched Uranium	30[1]	30[1]
Depleted Uranium	35[1]	35[1]
Ac-227	19	19
Am-241	na[c]	30[4]
Am-243	na	30[4]
Ce-144	na	2,100
Cm-243	na	0.79
Cm-244	na	1.0
Co-60	8[2]	8[2]
Cs-134	na	33
Cs-137	15[2]	15[2]
C-14	940	940
Eu-152	na	36
Eu-154	na	32
Eu-155	na	1.800
Fe-55	na	2.7E+07
H-3[d]	41,000	38,000
I-129	na	13
Mn-54	na	61
Ni-59	na	1.3E+07
Ni-63	na	4.9E+06
Np-237	na	0.58
Pa-231	18	18
Pb-210	140	na
Pu-238	na	25[4]
Pu-239	na	25[4]
Pu-240	na	25[4]
Pu-241	na	25[4]
Pu-242	na	25[4]

Radionuclide[a]	King Avenue Concentration (pCi/g)[b]	West Jefferson Concentration (pCi/g)[b]
Ra-226 (0-15 cm of soil)	5[2,3]	na
Ra-226 (>15 cm of soil)	15[2,3]	na
Ra-228	5[2,3]	na
Ru-106	na	180
Sb-125	na	118
Sm-151	na	6.700
Sr-90	5[2]	5[2]
Th-228	29	na
Th-230	5[3]	na
Th-232	5[3]	na

Table 1 Notes and References

Notes:

a. Activity concentrations above natural background concentrations. Where more than one radionuclide is present, the sum of the ratios of the individual radionuclide concentrations to their respective concentration limits shall not exceed 1.

b. Concentrations for which no specific reference is cited have been derived from RESRAD calculations and are the more restrictive values calculated for soil deposition at a depth of 5 meters.

c. Indicates that this radionuclide is not expected to be found at the indicated site.

d. Difference in tritium activity concentrations are due to the difference in depths of the water tables at two sites. The water table depth at King Avenue is deeper than that at West Jefferson.

References:

1. Options 1 and 2 of the Branch Technical Position, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (46 FR 52061, October 23, 1981).

2. NRC Memorandum, "Acceptable Cleanup Criteria and Practices for Decontamination and Decommissioning (License No. SNM-7)" dated April 17, 1992, to Harley L. Toy, License Coordinator and Manager, Nuclear Sciences, Battelle Memorial Institute from J.W.N. Hickey, Chief, Fuel Cycle Safety Branch, Division of Industrial and Medical Nuclear Safety, Office of Nuclear Material Safety and Safeguards.

3. DOE Order 5400.5, "Radiation Protection of the Public and the Environment".

4. NRC Policy and Guidance Directive FC83-23, "Termination of Byproduct, Source, and Special Nuclear Material Licenses".

Table 2
Cesium-137 Surrogate Analysis Data & Modified Cs-137 Screening Criteria

Sample ID (a,b)	Cs-137 Activity (pCi/g)	Co-60 Activity (pCi/g)	Eu-152 Activity (pCi/g)	Eu-154 Activity (pCi/g)	Am-241 Activity (b) (pCi/g)	Sr-90 Activity (pCi/g)	Pu-238 Activity (pCi/g)	Pu-239 Activity (pCi/g)
16741	40.1	0.05	<0.096	<0.053	1.36 g	<0.172	<0.009	0.053
16746	21.6	0.04	<0.079	<0.051	1.29 a	<0.184	0.026	0.9
16747	26.1	0.06	<0.077	<0.046	0.89 g	<0.175	<0.011	0.116
16751	8	<0.024	<0.068	<0.047	0.93g	<0.151	0.021	0.496
16752	39.1	0.06	<0.086	<0.046	10.74 a	<0.167	0.131	5.822
16607	74.2	0.28	7.26	0.65	1.18 a	0.59	0.0213	0.629
16608	18.7	0.07	4.03	0.26	0.47 a	<0.180	0.016	0.287
16668	41.6	0.08	<0.098	<0.061	2.59 a	NA	0.036	1.846
16686	38.1	0.07	<0.050	<0.031	4.71 a	NA	0.135	3.84
19079	11.7	0.17	8.02	0.64	0.018	4.39	<0.016	0.034
19080	32.4	<0.016	0.562	<0.053	<0.016	0.21	<0.019	<0.017
Average	*31.99*	*0.084*	*1.657*	*0.176*	*2.2*	*0.691*	*0.04*	*1.276*

Calculated Cs-137 Surrogate Ratio (c)	
Cs-137/Co-60	381
Cs-137/Eu-152	17
Cs-137/Eu-154	182
Cs-137Am-241	15
Cs-137/Sr-90	46
Cs-137/Pu-238	800
Cs-137/Pu-239	25
Cs-137/Pu-241 (d)	2.8

Modified Cs-137 Screening Criteria			
Cleanup Criteria (pCi/g)		*Surrogate Activity (pCi/g)*	*Summed Ratio*
Cs-137	15	11	0.73
Co-60	8	0.028884026	0.00
Eu-152	36	0.638543295	0.02
Eu-154	32	0.060518912	0.00
Am-241	30	0.756486402	0.03
Sr-90	5	0.237605502	0.05
Pu-238	25	0.013754298	0.00
Pu-239	25	0.438762113	0.02
Pu-241	25	3.928571429	0.16
		Unity Rule (e)	*1.00*

Notes:

(a) Battelle reported analytical results of samples obtained from the filter bed area between March and September 2000.

(b) Reported data obtained from gamma spectroscopy analysis

(c) Surrogate ratio calculated by dividing average Cs-137 activity by average activity of isotope of concern

(d) Pu-241 is calculated by applying a ratio to sum of Pu-238 and Pu-239 (obtained from ORIGEN 2.1 derived values, Battelle, 2003c), resulting in a Cs-137 to Pu-241 ratio of 2.8

(e) Unity Rule applied to surrogate calculated activity resulting in modified Cs-137 screening level of 11 pCi/g

Table 3

JN-2 Sanitation Line Section B Exposure Rate Survey Summary

100'

N/E Sidewall	
1	26μR
2	28μR
3	20μR
4	22μR
5	22μR

Trench "C" Soil	
1	28μR
2	30μR
3	32μR
4	34μR
5	28μR
6	34μR
7	32μR
8	36μR
9	36μR
10	30μR
11	32μR
12	36μR
13	32μR
14	28μR
15	38μR
16	28μR
17	26μR
18	24μR
19	26μR
20	24μR
21	26μR
22	24μR
23	26μR
24	22μR
25	24μR
26	22μR
27	20μR
28	22μR
29	24μR
30	24μR

S/W Sidewall	
1	32μR
2	30μR
3	34μR
4	24μR
5	26μR

Table 4

JN-2 Sanitation Line Section C Exposure Rate Survey Summary

100'

East Sidewall	
220'	20μR
240'	24μR
260'	26μR
280'	24μR
300'	24μR

Trench "C" Soil	
61m	22μR
62m	24μR
63m	22μR
64m	24μR
65m	24μR
66m	22μR
67m	24μR
68m	26μR
69m	26μR
70m	20μR
71m	24μR
72m	22μR
73m	24μR
74m	20μR
75m	22μR
76m	24μR
77m	24μR
78m	22μR
79m	22μR
80m	26μR
81m	22μR
82m	20μR
83m	22μR
84m	22μR
85m	24μR
86m	22μR
87m	22μR
88m	24μR
89m	22μR
90m	22μR

West Sidewall	
210'	24μR
230'	28μR
250'	24μR
270'	22μR
290'	22μR

Table 5

JN-2 Sanitation Line Section B Walkover Scan Result Summary

100'

N/E Sidewall	
1	5.32K cpm
2	5.28K cpm
3	4.87K cpm
4	4.29K cpm
5	4.37K cpm

Trench "C" Soil	
1	6.83K cpm
2	6.97K cpm
3	6.72K cpm
4	6.78K cpm
5	6.05K cpm
6	6.37K cpm
7	6.62K cpm
8	6.41K cpm
9	5.76K cpm
10	5.56K cpm
11	5.46K cpm
12	6.30K cpm
13	6.37K cpm
14	6.30K cpm
15	6.45K cpm
16	6.18K cpm
17	5.78K cpm
18	6.23K cpm
19	5.37K cpm
20	5.12K cpm
21	5.34K cpm
22	5.38K cpm
23	5.40K cpm
24	5.67K cpm
25	5.46K cpm
26	4.98K cpm
27	5.62K cpm
28	5.74K cpm
29	5.97K cpm
30	5.10K cpm

S/W Sidewall	
1	5.82K cpm
2	5.75K cpm
3	6.42K cpm
4	5.11K cpm
5	5.52K cpm

* Walkover survey performed using a collimator

Table 6

JN-2 Sanitation Line Section C Walkover Scan Result Summary

	Side		Trench		Side	
100'	1	4.76K cpm	1	5.94K cpm	1	5.23K cpm
			2	5.65K cpm		
			3	5.27K cpm		
			4	5.31K cpm		
			5	5.56K cpm		
			6	5.63K cpm		
	2	4.36K cpm	7	5.40K cpm	2	4.87K cpm
			8	5.36K cpm		
			9	5.71K cpm		
			10	5.48K cpm		
			11	5.96K cpm		
			12	5.91K cpm		
	3	4.39K cpm	13	4.97K cpm	3	4.60K cpm
			14	5.72K cpm		
			15	5.35K cpm		
			16	5.22K cpm		
			17	5.72K cpm		
			18	6.12K cpm		
	4	4.77K cpm	19	4.78K cpm	4	5.84K cpm
			20	5.42K cpm		
			21	6.02K cpm		
			22	5.55K cpm		
			23	5.71K cpm		
			24	5.81K cpm		
	5	4.38K cpm	25	5.49K cpm	5	4.42K cpm
			26	5.20K cpm		
			27	5.80K cpm		
			28	5.04K cpm		
			29	5.33K cpm		
			30	5.96K cpm		

* Walkover survey performed using a collimator

Table 7

JN-2 Sanitation Line Section B Excavation Base/Sidewall Soil Sample Results (pCi/g)

	N/E Sidewall		Trench "C" Soil		S/W Sidewall	
100'	120'	3.44E-02(ND)	31m	1.75E-02(ND)	110'	2.56E-02(ND)
			32m	1.60E-02(ND)		
			33m	1.93E-02(ND)		
			34m	1.86E-02(ND)		
			35m	4.61E-02(ND)		
			36m	3.37E-02(ND)		
	140'	3.93E-02(ND)	37m	4.49E-02(ND)	130'	3.32E-02(ND)
			38m	3.45E-02(ND)		
			39m	4.28E-02(ND)		
			40m	3.34E-02(ND)		
			41m	4.68E-02(ND)		
			42m	3.31E-02(ND)		
	160'	3.05E-02(ND)	43m	4.14E-02(ND)	150'	3.04E-02(ND)
			44m	3.64E-02(ND)		
			45m	4.84E-02(ND)		
			46m	1.82E-02(ND)		
			47m	1.75E-02(ND)		
			48m	1.77E-02(ND)		
	180'	1.55E-02(ND)	49m	1.76E-02(ND)	170'	3.44E-02(ND)
			50m	1.85E-02(ND)		
			51m	1.68E-02(ND)		
			52m	1.73E-02(ND)		
			53m	1.64E-02(ND)		
			54m	1.61E-02(ND)		
	200'	1.58E-02(ND)	55m	1.62E-02(ND)	190'	1.73E-02(ND)
			56m	1.43E-02(ND)		
			57m	1.66E-02(ND)		
			58m	1.68E-02(ND)		
			59m	1.68E-02(ND)		
			60m	4.10E-02(ND)		

Table 8

JN-2 Sanitation Line Section C Excavation Base/Sidewall Soil Sample Results (pCi/g)

East Sidewall		Trench "C" Soil		West Sidewall	
220'	1.59E-02(ND)	61m	3.17E-02(ND)	210'	1.64E-02(ND)
		62m	3.03E-02(ND)		
		63m	3.69E-02(ND)		
		64m	3.37E-02(ND)		
		65m	3.14E-02(ND)		
		66m	3.54E-02(ND)		
240'	1.52E-02(ND)	67m	2.93E-02(ND)	230'	1.58E-02(ND)
		68m	3.56E-02(ND)		
		69m	3.31E-02(ND)		
		70m	3.72E-02(ND)		
		71m	3.66E-02(ND)		
		72m	2.97E-02(ND)		
260'	1.63E-02(ND)	73m	3.45E-02(ND)	250'	1.68E-02(ND)
		74m	2.84E-02(ND)		
		75m	3.13E-02(ND)		
		76m	2.61E-02(ND)		
		77m	3.65E-02(ND)		
		78m	3.45E-02(ND)		
280'	1.55E-02(ND)	79m	4.13E-02(ND)	270'	1.72E-02(ND)
		80m	3.32E-02(ND)		
		81m	4.12E-02(ND)		
		82m	3.10E-02(ND)		
		83m	3.97E-02(ND)		
		84m	3.76E-02(ND)		
300'	1.76E-02(ND)	85m	2.99E-02(ND)	290'	1.74E-02(ND)
		86m	1.67E-02(ND)		
		87m	1.72E-02(ND)		
		88m	1.41E-02(ND)		
		89m	1.50E-02(ND)		
		90m	1.50E-02(ND)		

100'

Table 9

JN-2 Sanitation Line Section B Excavation Soil Analytical Results

Analytical Parameter	RL05-1207-1612 @ 31 meters			RL05-1208-1613 @ 32 meters			RL05-1209-1614 @ 33 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	5.36E-02	7.45E-02	1.33E-01	1.29E-02	.-749	1.30E-01	-2.70E-02	8.56E-02	1.45E-01
K-40	1.34E+01	1.44E+00	1.24E-01	1.31E+01	1.41E+00	1.39E-01	1.84E+01	1.76E+00	1.54E-01
Co-58	-4.28E-03	9.22E-03	1.58E-02	-1.80E-02	9.31E-03	1.37E-02	-4.09E-03	9.74E-03	1.67E-02
Co-60	-3.65E-03	9.43E-03	1.60E-02	2.58E-04	1.05E-02	1.83E-02	-9.63E-03	1.17E-02	1.89E-02
Zn-65	-1.75E-02	2.76E-02	3.82E-02	-1.29E-02	2.51E-02	3.53E-02	9.30E-04	3.18E-02	4.73E-02
Sb-125	2.35E-02	2.88E-02	5.10E-02	-2.20E-02	2.75E-02	4.54E-02	2.18E-03	3.07E-02	5.30E-02
I-131	-5.63E-03	1.02E-02	1.72E-02	-3.17E-03	1.01E-02	1.73E-02	-9.79E-03	1.16E-02	1.93E-02
Cs-134	6.03E-03	9.54E-03	1.48E-02	4.68E-04	9.86E-03	1.46E-02	9.10E-03	1.10E-02	1.72E-02
Cs-137	-2.53E-03	1.04E-02	1.75E-02	-8.84E-03	1.00E-02	1.60E-02	-7.26E-03	1.19E-02	1.93E-02
Eu-152	3.62E-02	4.07E-02	5.13E-02	2.61E-02	3.85E-02	5.23E-02	1.46E-02	4.37E-02	5.79E-02
Eu-154	2.06E-02	2.84E-02	4.84E-02	-3.97E-03	2.71E-02	4.53E-02	2.08E-03	3.10E-02	5.22E-02
Tl-208	1.74E-01	2.54E-02	1.63E-02	1.90E-01	2.75E-02	1.59E-02	2.28E-01	3.18E-02	2.01E-02
Bi-212	6.92E-01	2.31E-01	2.09E-01	5.44E-01	2.02E-01	2.19E-01	8.32E-01	2.44E-01	2.79E-01
Pb-212	5.98E-01	5.69E-02	3.59E-02	5.48E-01	5.32E-02	3.58E-02	8.72E-01	7.60E-02	3.90E-02
Bi-214	7.48E-01	6.40E-02	3.05E-02	7.09E-01	6.05E-02	3.01E-02	7.59E-01	6.63E-02	3.63E-02
Pb-214	7.51E-01	6.66E-02	3.61E-02	7.20E-01	6.25E-02	3.81E-02	7.58E-01	6.87E-02	4.34E-02
Ac-228	5.95E-01	6.12E-02	6.05E-02	6.22E-01	6.43E-02	6.30E-02	8.10E-01	7.51E-02	6.67E-02
Th-234	2.37E-01	1.65E+00	6.31E-01	7.20E-02	1.58E+00	6.28E-01	6.04E-01	1.80E+00	7.23E-01
U-235	6.16E-02	9.69E-02	3.51E-02	1.14E-02	9.36E-02	3.41E-02	7.01E-02	1.07E-01	3.89E-02
Am-241	1.52E-02	2.95E-01	5.07E-01	-3.08E-02	2.86E-01	4.90E-01	-3.21E-01	3.27E-01	5.43E-01

Analytical Parameter	RL05-1210-1615 @ 34 meters			RL05-1211-1616 @ 35 meters			RL05-1212-1617 @ 36 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.07E-02	8.64E-02	1.47E-01	3.35E-02	1.57E-01	2.85E-01	1.97E-02	1.39E-01	2.56E-01
K-40	1.59E+01	1.70E+00	1.44E-01	1.43E+01	1.81E+00	3.89E-01	1.45E+01	1.69E+00	2.86E-01
Co-58	4.14E-04	9.44E-03	1.67E-02	-2.27E-02	2.41E-02	3.79E-02	-3.43E-03	1.64E-02	2.86E-02
Co-60	3.38E-03	1.12E-02	1.98E-02	5.87E-03	2.38E-02	4.77E-02	1.36E-02	1.92E-02	3.92E-02
Zn-65	-1.76E-02	2.86E-02	3.97E-02	-1.86E-02	6.56E-02	1.00E-01	-3.93E-02	5.82E-02	7.95E-02
Sb-125	8.86E-03	3.00E-02	5.20E-02	-3.44E-02	6.48E-02	1.07E-01	-1.31E-02	4.61E-02	8.20E-02
I-131	-3.26E-03	1.10E-02	1.88E-02	-1.09E-02	2.21E-02	3.69E-02	-3.28E-04	1.91E-02	3.28E-02
Cs-134	1.89E-03	1.08E-02	1.61E-02	1.80E-02	2.18E-02	3.95E-02	5.32E-03	1.70E-02	2.81E-02
Cs-137	-9.62E-03	1.16E-02	1.86E-02	1.34E-03	2.51E-02	4.61E-02	-1.86E-02	2.09E-02	3.37E-02
Eu-152	1.15E-02	4.16E-02	5.70E-02	-3.43E-02	6.83E-02	1.10E-01	-3.96E-02	5.95E-02	9.40E-02
Eu-154	4.17E-03	2.96E-02	4.97E-02	6.96E-03	4.56E-02	7.65E-02	-1.26E-02	4.10E-02	6.64E-02
Tl-208	2.35E-01	3.17E-02	1.91E-02	2.46E-01	5.99E-02	9.83E-02	2.02E-01	5.02E-02	3.27E-02
Bi-212	1.13E+00	3.15E-01	2.41E-01	9.34E-01	6.09E-01	5.71E-01	7.22E-01	4.45E-01	4.80E-01
Pb-212	8.49E-01	7.31E-02	3.95E-02	8.15E-01	9.91E-02	7.36E-02	6.90E-01	9.28E-02	7.24E-02
Bi-214	7.27E-01	6.31E-02	3.48E-02	7.11E-01	1.30E-01	2.24E-01	6.82E-01	9.98E-02	6.03E-02
Pb-214	7.78E-01	6.64E-02	4.03E-02	7.37E-01	9.92E-02	9.30E-02	8.40E-01	9.75E-02	6.51E-02
Ac-228	6.08E-01	7.57E-02	6.60E-02	8.12E-01	2.50E-01	3.80E-01	7.74E-01	2.00E-01	3.14E-01
Th-234	7.98E-01	1.76E+00	6.76E-01	5.95E-01	7.71E-01	8.70E-01	4.38E-02	6.16E-01	7.61E-01
U-235	2.60E-02	1.06E-01	3.67E-02	-4.57E-02	1.77E-01	7.58E-02	-4.46E-02	1.54E-01	6.60E-02
Am-241	-1.37E-01	3.16E-01	5.33E-01	-5.64E-02	9.39E-02	1.55E-01	3.13E-02	7.70E-02	1.32E-01

Table 9

JN-2 Sanitation Line Section B Excavation Soil Analytical Results

Analytical Parameter	RL05-1213-1618 @ 37 meters			RL05-1214-1619 @ 38 meters			RL05-1215-1620 @ 39 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-6.29E-02	1.79E-01	3.02E-01	8.35E-02	1.36E-01	2.57E-01	-4.57E-02	1.69E-01	2.86E-01
K-40	1.38E+01	1.78E+00	4.83E-01	1.49E+01	1.73E+00	2.92E-01	1.50E+01	1.84E+00	4.22E-01
Co-58	-1.47E-02	2.44E-02	4.06E-02	-1.09E-02	1.91E-02	3.14E-02	-8.67E-03	2.33E-02	4.02E-02
Co-60	7.31E-05	2.66E-02	5.08E-02	1.36E-02	2.20E-02	4.31E-02	-7.82E-03	2.55E-02	4.60E-02
Zn-65	-7.25E-03	7.21E-02	1.14E-01	-4.99E-02	6.31E-02	8.43E-02	9.07E-03	6.16E-02	1.03E-01
Sb-125	3.60E-02	6.40E-02	1.19E-01	-1.69E-02	4.56E-02	8.04E-02	-2.77E-02	6.39E-02	1.07E-01
I-131	5.23E-03	2.02E-02	3.68E-02	1.74E-02	1.77E-02	3.30E-02	-2.51E-03	1.88E-02	3.29E-02
Cs-134	2.77E-03	2.46E-02	3.99E-02	8.12E-05	1.74E-02	2.72E-02	8.24E-04	2.25E-02	3.62E-02
Cs-137	-1.90E-02	2.69E-02	4.49E-02	-1.13E-02	2.05E-02	3.45E-02	-1.73E-02	2.55E-02	4.28E-02
Eu-152	-1.19E-02	6.57E-02	1.08E-01	-1.10E-02	5.57E-02	9.08E-02	8.29E-02	6.46E-02	1.14E-01
Eu-154	-2.57E-02	4.71E-02	7.57E-02	7.24E-03	3.88E-02	6.47E-02	-1.14E-02	4.82E-02	7.89E-02
Tl-208	2.44E-01	5.41E-02	9.87E-02	2.63E-01	5.33E-02	3.31E-02	2.53E-01	5.35E-02	9.43E-02
Bi-212	8.02E-01	4.82E-01	5.63E-01	6.90E-01	3.47E-01	6.81E-01	5.92E-01	5.59E-01	6.13E-01
Pb-212	7.46E-01	9.23E-02	7.03E-02	7.58E-01	7.95E-02	6.14E-02	7.67E-01	9.16E-02	7.27E-02
Bi-214	7.07E-01	1.42E-01	2.34E-01	7.69E-01	9.55E-01	5.83E-02	7.65E-01	1.19E-01	8.24E-02
Pb-214	7.93E-01	1.11E-01	9.19E-02	7.82E-01	9.75E-02	6.95E-02	7.66E-01	1.05E-01	8.40E-02
Ac-228	7.23E-01	2.04E-01	3.76E-01	8.09E-01	1.12E-01	1.37E-01	5.82E-01	2.17E-01	3.53E-01
Th-234	3.79E-01	7.30E-01	8.77E-01	7.73E-01	6.95E-01	7.70E-01	8.48E-01	5.19E-01	7.41E-01
U-235	4.98E-02	1.75E-01	7.36E-02	1.61E-01	1.49E-01	6.30E-02	2.31E-01	1.81E-01	7.14E-02
Am-241	9.37E-02	9.33E-02	1.66E-01	-1.69E-02	7.75E-02	1.30E-01	1.19E-01	1.00E-01	1.62E-01

Analytical Parameter	RL05-1216-1621 @ 40 meters			RL05-1217-1622 @ 41 meters			RL05-1218-1623 @ 42 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.06E-01	1.51E-01	2.54E-01	-1.17E-01	1.80E-01	2.89E-01	-8.86E-03	1.36E-01	2.46E-01
K-40	1.61E+01	1.83E+00	3.31E-01	1.58E+01	1.99E+00	5.39E-01	1.64E+01	1.87E+00	3.27E-01
Co-58	-1.36E-02	1.94E-02	3.13E-02	5.77E-03	1.97E-02	3.82E-02	-5.03E-03	1.73E-02	2.97E-02
Co-60	-6.24E-03	2.03E-02	3.55E-02	-1.84E-02	2.56E-02	4.25E-02	7.54E-03	2.02E-02	3.92E-02
Zn-65	-3.51E-03	5.32E-02	8.19E-02	1.51E-02	5.76E-02	9.95E-02	5.10E-02	5.72E-02	9.80E-02
Sb-125	5.88E-03	5.10E-02	9.29E-02	-5.94E-02	6.37E-02	9.99E-02	7.86E-03	5.19E-02	9.47E-02
I-131	-8.66E-03	1.72E-02	2.83E-02	1.41E-03	2.11E-02	3.74E-02	-2.40E-03	1.91E-02	3.25E-02
Cs-134	-1.81E-04	1.97E-02	3.05E-02	2.47E-02	2.07E-02	3.98E-02	2.53E-03	1.93E-02	3.05E-02
Cs-137	-2.10E-03	1.88E-02	3.34E-02	-1.45E-02	2.74E-02	4.68E-02	-1.48E-02	2.01E-02	3.31E-02
Eu-152	-4.38E-02	5.63E-02	8.83E-02	2.33E-02	6.54E-02	1.11E-01	6.43E-04	5.94E-02	9.78E-02
Eu-154	-4.55E-02	4.10E-02	6.29E-02	-9.50E-03	4.63E-02	7.60E-02	1.69E-02	4.19E-02	7.03E-02
Tl-208	2.68E-01	5.60E-02	3.41E-02	2.64E-01	6.47E-02	4.37E-02	2.68E-01	5.58E-02	3.51E-02
Bi-212	9.50E-01	4.97E-01	4.82E-01	6.76E-01	4.38E-01	8.77E-01	7.70E-01	4.24E-01	5.19E-01
Pb-212	8.02E-01	8.65E-02	6.62E-02	8.24E-01	9.93E-02	8.80E-02	7.35E-01	9.46E-02	8.09E-02
Bi-214	7.20E-01	1.05E-01	6.73E-02	6.38E-01	1.21E-01	2.16E-01	6.99E-01	9.63E-02	6.26E-02
Pb-214	7.03E-01	8.44E-02	7.36E-02	6.89E-01	1.03E-01	9.14E-02	7.19E-01	9.41E-02	6.60E-02
Ac-228	7.88E-01	1.22E-01	1.31E-01	9.54E-01	1.49E-01	1.83E-01	8.01E-01	1.25E-01	1.45E-01
Th-234	8.16E-01	7.18E-01	7.83E-01	9.90E-01	8.76E-01	8.73E-01	8.59E-01	7.18E-01	7.33E-01
U-235	7.63E-02	1.49E-01	5.98E-02	-1.38E-01	1.99E-01	7.41E-02	6.59E-02	1.55E-01	6.08E-02
Am-241	-1.53E-02	8.32E-02	1.39E-01	-4.62E-02	9.76E-02	1.62E-01	-1.18E-02	8.26E-02	1.38E-01

Table 9

JN-2 Sanitation Line Section B Excavation Soil Analytical Results

Analytical Parameter	RL05-1219-1624 @ 43 meters			RL05-1220-1625 @ 44 meters			RL05-1221-1626 @ 45 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.23E-01	2.16E-01	3.51E-01	-1.22E-01	1.33E-01	2.19E-01	-9.66E-02	1.97E-01	3.23E-01
K-40	1.61E+01	2.01E+00	3.14E-01	1.52E+01	1.75E+00	3.02E-01	1.66E+01	2.08E+00	3.86E-01
Co-58	-2.23E-02	2.40E-02	3.76E-02	5.17E-03	1.68E-02	3.12E-02	-5.87E-03	2.37E-02	4.18E-02
Co-60	1.52E-03	2.64E-02	5.11E-02	-1.66E-02	2.14E-02	3.46E-02	-7.50E-03	2.72E-02	4.93E-02
Zn-65	3.36E-02	6.51E-02	1.15E-01	-2.59E-02	5.77E-02	8.27E-02	-6.91E-02	6.51E-02	1.15E-01
Sb-125	-2.49E-02	6.20E-02	1.04E-01	-5.68E-03	4.74E-02	8.51E-02	-2.38E-02	6.84E-02	1.15E-01
I-131	7.90E-03	2.10E-02	3.85E-02	3.58E-03	1.84E-02	3.21E-02	1.67E-03	2.18E-02	3.86E-02
Cs-134	1.89E-02	2.51E-02	4.44E-02	-4.89E-03	1.94E-02	2.91E-02	9.16E-03	2.16E-02	3.74E-02
Cs-137	-2.88E-02	2.64E-02	4.14E-02	-1.43E-02	2.19E-02	3.64E-02	-6.51E-03	2.73E-02	4.84E-02
Eu-152	-2.47E-02	6.84E-02	1.11E-01	-2.29E-03	5.73E-02	9.42E-02	1.77E-02	6.78E-02	1.12E-01
Eu-154	-1.80E-02	4.78E-02	7.77E-02	-1.30E-02	4.04E-02	6.53E-02	-6.02E-04	4.77E-02	7.93E-02
Tl-208	2.70E-01	6.41E-02	1.07E-01	2.20E-01	5.07E-02	7.83E-02	2.55E-01	6.40E-02	1.05E-01
Bi-212	1.01E+00	6.21E-01	6.30E-01	5.16E-01	3.25E-01	6.34E-01	5.28E-01	5.07E-01	7.06E-01
Pb-212	8.73E-01	1.02E-01	7.25E-02	7.30E-01	9.42E-02	9.22E-02	8.75E-01	1.01E-01	7.24E-02
Bi-214	7.01E-01	1.15E-01	9.55E-02	7.56E-01	1.08E-01	6.25E-02	7.82E-01	1.48E-01	2.35E-01
Pb-214	8.25E-01	1.10E-01	9.26E-02	7.82E-01	9.97E-02	7.22E-02	7.17E-01	9.86E-02	8.43E-02
Ac-228	7.34E-01	2.27E-01	3.90E-01	8.46E-01	1.98E-01	2.91E-01	8.69E-01	1.38E-01	1.90E-01
Th-234	1.59E+00	1.25E+00	8.87E-01	8.43E-01	7.08E-01	7.84E-01	5.17E-02	6.99E-01	8.69E-01
U-235	7.53E-02	1.89E-01	7.60E-02	7.24E-02	1.50E-01	6.14E-02	5.78E-02	1.79E-01	7.26E-02
Am-241	8.88E-02	9.76E-02	1.58E-01	-2.44E-02	8.19E-02	1.36E-01	2.90E-02	8.89E-02	1.54E-01

Analytical Parameter	RL05-1266-1662 @ 46 meters			RL05-1267-1663 @ 47 meters			RL05-1268-1664 @ 48 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.93E-02	8.40E-02	1.42E-01	7.90E-03	8.07E-02	1.39E-01	5.46E-04	8.48E-02	1.46E-01
K-40	1.56E+01	1.66E+00	1.38E-01	1.59E+01	1.70E+00	1.56E-01	1.56E+01	1.67E+00	1.54E-01
Co-58	-1.10E-02	1.03E-02	1.67E-02	-1.33E-02	1.06E-02	1.70E-02	-1.22E-02	1.00E-02	1.60E-02
Co-60	8.33E-03	1.12E-02	2.07E-02	8.29E-03	1.12E-02	2.05E-02	-2.16E-03	1.15E-02	1.97E-02
Zn-65	2.15E-04	2.88E-02	4.28E-02	-2.63E-02	3.18E-02	4.29E-02	-1.03E-02	2.97E-02	4.25E-02
Sb-125	2.37E-02	2.89E-02	5.13E-02	-1.03E-02	3.06E-02	5.18E-02	3.02E-02	2.90E-02	5.19E-02
I-131	-9.71E-03	1.11E-02	1.85E-02	-1.11E-02	1.14E-02	1.87E-02	8.79E-03	1.12E-02	1.99E-02
Cs-134	-7.48E-04	1.10E-02	1.61E-02	-1.13E-02	1.16E-02	1.56E-02	3.09E-03	1.07E-02	1.60E-02
Cs-137	-1.52E-02	1.17E-02	1.82E-02	-1.00E-02	1.10E-02	1.75E-02	-1.04E-02	1.11E-02	1.77E-02
Eu-152	-5.03E-03	4.27E-02	5.58E-02	4.00E-02	4.35E-02	5.88E-02	2.26E-02	4.27E-02	5.57E-02
Eu-154	1.53E-02	2.98E-02	5.06E-02	2.65E-02	3.04E-02	5.19E-02	2.35E-02	3.10E-02	5.11E-02
Tl-208	2.28E-01	3.43E-02	1.95E-02	2.48E-01	3.33E-02	1.81E-02	2.22E-01	3.03E-02	1.77E-02
Bi-212	7.96E-01	3.24E-01	2.52E-01	7.03E-01	2.30E-01	2.38E-01	9.39E-01	3.01E-01	2.58E-01
Pb-212	7.81E-01	7.02E-02	3.73E-02	7.71E-01	6.93E-02	3.85E-02	7.30E-01	6.70E-02	3.85E-02
Bi-214	6.89E-01	6.24E-02	3.40E-02	7.14E-01	6.42E-02	3.49E-02	7.16E-01	6.53E-02	3.39E-02
Pb-214	7.39E-01	6.62E-02	3.85E-02	7.62E-01	6.73E-02	4.14E-02	7.69E-01	6.95E-02	4.22E-02
Ac-228	7.47E-01	7.93E-02	6.84E-02	7.74E-01	7.54E-02	6.62E-02	7.43E-01	7.24E-02	6.40E-02
Th-234	1.95E+00	1.96E+00	7.02E-01	1.64E+00	1.89E+00	7.03E-01	-3.78E-01	1.74E+00	6.89E-01
U-235	7.82E-02	1.04E-01	3.71E-02	8.92E-02	1.05E-01	3.75E-02	8.23E-02	1.05E-01	3.84E-02
Am-241	-4.14E-01	3.21E-01	5.26E-01	-2.20E-01	3.17E-01	5.33E-01	2.13E-02	3.15E-01	5.43E-01

Table 9

JN-2 Sanitation Line Section B Excavation Soil Analytical Results

Analytical Parameter	RL05-1269-1665 @ 49 meters			RL05-1270-1666 @ 50 meters			RL05-1271-1667 @ 51 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	6.38E-03	8.59E-02	1.48E-01	3.67E-02	7.53E-02	1.33E-01	3.53E-02	8.47E-02	1.48E-01
K-40	1.50E+01	1.60E+00	1.37E-01	1.36E+01	1.46E+00	1.49E-01	1.43E+01	1.54E+00	1.37E-01
Co-58	-5.64E-03	9.88E-03	1.68E-02	-8.44E-03	8.85E-03	1.45E-02	-1.10E-02	9.76E-03	1.58E-02
Co-60	-6.98E-03	1.10E-02	1.81E-02	3.91E-03	9.55E-03	1.74E-02	-3.49E-03	9.99E-03	1.70E-02
Zn-65	2.02E-03	2.86E-02	4.27E-02	-1.34E-03	2.55E-02	3.78E-02	-1.15E-02	2.78E-02	3.95E-02
Sb-125	-2.02E-02	2.91E-02	4.84E-02	4.62E-02	2.77E-02	5.06E-02	9.11E-03	2.87E-02	4.99E-02
I-131	8.53E-03	1.15E-02	2.03E-02	2.66E-03	1.10E-02	1.91E-02	-5.61E-03	1.16E-02	1.96E-02
Cs-134	6.94E-03	1.07E-02	1.64E-02	-2.01E-04	1.06E-02	1.55E-02	1.37E-03	1.04E-02	1.55E-02
Cs-137	-1.16E-02	1.12E-02	1.76E-02	-6.51E-03	1.13E-02	1.85E-02	-1.54E-02	1.10E-02	1.68E-02
Eu-152	2.91E-03	4.09E-02	5.62E-02	-2.21E-02	3.87E-02	5.26E-02	-7.13E-03	4.14E-02	5.64E-02
Eu-154	-8.49E-03	2.84E-02	4.73E-02	2.20E-03	2.71E-02	4.56E-02	7.72E-03	3.06E-02	4.80E-02
Tl-208	2.09E-01	3.04E-02	1.80E-02	1.69E-01	2.69E-02	1.76E-02	1.86E-01	2.95E-02	1.71E-02
Bi-212	7.24E-01	2.54E-01	2.39E-01	7.88E-01	2.49E-01	2.26E-01	8.78E-01	2.74E-01	2.36E-01
Pb-212	7.02E-01	6.59E-02	3.83E-02	5.67E-01	5.46E-02	3.48E-02	6.73E-01	6.14E-02	3.75E-02
Bi-214	8.00E-01	6.58E-02	3.56E-02	7.55E-01	6.26E-02	3.29E-02	7.23E-01	6.40E-02	3.45E-02
Pb-214	8.10E-01	6.87E-02	4.20E-02	7.58E-01	6.43E-02	3.93E-02	7.71E-01	6.58E-02	3.94E-02
Ac-228	6.57E-01	6.78E-02	6.38E-02	5.49E-01	6.25E-02	6.29E-02	6.96E-01	7.55E-02	6.54E-02
Th-234	9.33E-01	1.80E+00	6.83E-01	1.27E+00	1.70E+00	6.46E-01	6.39E-01	1.67E+00	6.74E-01
U-235	5.15E-02	1.05E-01	3.81E-02	4.55E-02	9.77E-02	3.54E-02	4.70E-02	1.03E-01	3.69E-02
Am-241	1.65E-01	3.09E-01	5.22E-01	-3.47E-01	2.91E-01	4.78E-01	-2.50E-01	3.09E-01	5.16E-01

Analytical Parameter	RL05-1272-1686 @ 52 meters			RL05-1273-1687 @ 53 meters			RL05-1274-1688 @ 54 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-8.07E-03	7.85E-02	1.34E-01	3.35E-02	7.49E-02	1.32E-01	9.78E-03	8.07E-02	1.39E-01
K-40	1.33E+01	1.45E+00	1.35E-01	1.37E+01	1.47E+00	1.22E-01	1.32E+01	1.42E+00	1.37E-01
Co-58	1.41E-02	1.01E-02	1.70E-02	-4.25E-03	9.23E-03	1.58E-02	-1.75E-03	9.44E-03	1.42E-02
Co-60	-8.13E-04	1.07E-02	1.87E-02	3.73E-03	1.07E-02	1.92E-02	-1.95E-03	1.04E-02	1.78E-02
Zn-65	5.04E-03	2.73E-02	4.14E-02	-1.25E-02	2.79E-02	3.95E-02	-1.51E-03	2.86E-02	4.22E-02
Sb-125	1.30E-02	2.79E-02	4.90E-02	1.80E-02	2.59E-02	4.60E-02	8.72E-03	2.79E-02	4.87E-02
I-131	-4.34E-03	1.11E-02	1.89E-02	6.13E-03	1.05E-02	1.86E-02	5.69E-03	1.11E-02	1.95E-02
Cs-134	-4.25E-03	1.06E-02	1.51E-02	3.04E-05	9.86E-03	1.45E-02	3.45E-03	9.75E-03	1.48E-02
Cs-137	-8.16E-03	1.07E-02	1.73E-02	-2.16E-02	1.12E-02	1.64E-02	-4.52E-03	9.77E-03	1.61E-02
Eu-152	2.44E-02	4.06E-02	5.46E-02	-3.60E-03	3.97E-02	5.07E-02	-8.49E-03	3.80E-02	5.31E-02
Eu-154	-1.34E-02	2.85E-02	4.72E-02	1.11E-03	2.74E-02	4.61E-02	-1.23E-02	2.67E-02	4.42E-02
Tl-208	1.76E-01	2.69E-02	1.73E-02	1.57E-01	2.34E-02	1.69E-02	1.78E-01	2.63E-02	1.69E-02
Bi-212	7.32E-01	2.49E-01	2.36E-01	5.77E-01	2.14E-01	2.44E-01	4.61E-01	2.51E-01	2.21E-01
Pb-212	5.85E-02	5.73E-02	3.75E-02	5.42E-01	5.38E-02	3.57E-02	6.04E-01	5.78E-02	3.50E-02
Bi-214	7.86E-01	6.65E-02	3.38E-02	7.04E-01	6.03E-02	3.22E-02	7.25E-01	5.92E-02	3.17E-02
Pb-214	8.00E-01	7.01E-02	4.02E-02	7.14E-01	6.13E-02	3.79E-02	7.80E-01	6.61E-02	3.84E-02
Ac-228	5.45E-01	6.39E-02	6.34E-02	5.53E-01	6.03E-02	6.42E-02	6.57E-01	6.59E-02	6.05E-02
Th-234	1.00E+00	1.78E+00	7.12E-01	1.16E+00	1.66E+00	6.22E-01	9.32E-01	1.63E+00	6.39E-01
U-238	4.54E-02	1.03E-01	3.96E-02	2.91E-02	9.54E-02	3.61E-02	4.36E-02	9.71E-02	3.51E-02
Am-241	-2.20E-01	3.10E-01	5.21E-01	-2.81E-01	2.89E-01	4.79E-01	-2.56E-01	2.90E-01	4.82E-01

Table 9

JN-2 Sanitation Line Section B Excavation Soil Analytical Results

Analytical Parameter	RL05-1275-1689 @ 55 meters			RL05-1276-1690 @ 56 meters			RL05-1277-1691 @ 57 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.31E-02	7.55E-02	1.27E-01	-1.73E-02	7.18E-02	1.22E-01	5.33E-02	7.73E-02	1.37E-01
K-40	1.32E+01	1.42E+00	1.29E-01	1.19E+01	1.28E+00	1.25E-01	1.37E+01	1.47E+00	1.23E-01
Co-58	-1.04E-02	8.98E-03	1.45E-02	-2.98E-03	8.14E-03	1.40E-02	-1.01E-02	9.49E-03	1.55E-02
Co-60	-8.00E-03	1.01E-02	1.63E-02	-4.36E-03	8.89E-03	1.49E-02	2.34E-04	9.79E-03	1.72E-02
Zn-65	-2.37E-02	2.77E-02	3.72E-02	-5.90E-03	2.52E-02	3.65E-02	-1.31E-02	2.70E-02	3.81E-02
Sb-125	1.90E-02	2.58E-02	4.57E-02	4.63E-03	2.43E-02	4.20E-02	6.58E-03	2.66E-02	4.63E-02
I-131	6.52E-03	1.01E-02	1.79E-02	3.45E-03	9.39E-02	1.65E-02	-3.41E-03	1.06E-02	1.81E-02
Cs-134	1.99E-03	9.60E-03	1.43E-02	-2.41E-03	8.82E-03	1.27E-02	-6.44E-03	1.05E-02	1.46E-02
Cs-137	-9.10E-03	1.01E-02	1.62E-02	-1.18E-02	9.23E-03	1.43E-02	-1.30E-02	1.07E-02	1.66E-02
Eu-152	3.35E-03	3.76E-02	5.11E-02	1.05E-02	3.61E-02	4.75E-02	3.26E-03	3.87E-02	5.01E-02
Eu-154	-9.16E-03	2.66E-02	4.42E-02	-2.28E-03	2.52E-02	4.21E-02	-1.74E-02	2.74E-02	4.52E-02
Tl-208	1.89E-01	2.73E-02	1.56E-02	1.53E-01	2.30E-02	1.45E-02	1.76E-01	2.70E-02	3.59E-02
Bi-212	3.61E-01	2.44E-01	2.10E-01	4.86E-01	2.52E-01	1.83E-01	5.78E-01	2.08E-01	2.31E-01
Pb-212	5.55E-01	5.31E-02	3.58E-02	5.16E-01	4.88E-02	3.29E-02	6.20E-01	6.60E-02	3.50E-02
Bi-214	6.46E-01	5.71E-02	3.31E-02	6.44E-01	5.48E-02	2.86E-02	7.69E-01	6.38E-02	3.32E-02
Pb-214	6.89E-01	6.25E-02	3.61E-02	6.72E-01	5.86E-02	3.41E-02	8.02E-01	6.75E-02	3.79E-02
Ac-228	6.09E-01	6.26E-02	5.53E-02	5.67E-01	5.82E-02	5.85E-02	5.51E-01	6.11E-02	6.09E-02
Th-234	3.45E-01	1.53E+00	6.22E-01	1.68E+00	1.60E+00	5.65E-01	4.35E-01	1.61E+00	6.53E-01
U-235	9.42E-04	9.47E-02	3.43E-02	1.17E-02	8.70E-02	3.13E-02	1.20E-01	3.38E-02	2.84E-02
Am-241	1.19E-01	2.74E-01	4.76E-01	-3.11E-01	2.67E-01	4.39E-01	4.67E-02	2.88E-01	4.97E-01

Analytical Parameter	RL05-1278-1693 @ 58 meters			RL05-1279-1694 @ 59 meters			RL05-1280-1712 @ 60 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	2.10E-02	7.99E-02	1.39E-01	-3.46E-02	7.67E-02	1.29E-01	4.17E-02	1.81E-01	3.28E-01
K-40	1.33E+01	1.45E+00	1.47E-01	1.36E+01	1.46E+00	1.32E-01	1.37E+01	1.80E+00	4.72E-01
Co-58	-1.54E-03	9.35E-03	1.63E-02	-1.20E-02	8.98E-03	1.42E-02	-1.76E-02	2.41E-02	3.93E-02
Co-60	-7.72E-04	1.14E-02	1.97E-02	1.34E-03	1.05E-02	1.86E-02	-7.21E-03	2.56E-02	4.67E-02
Zn-65	-1.33E-03	2.64E-02	3.91E-02	-3.00E-03	2.28E-02	3.37E-02	4.36E-03	6.30E-02	1.04E-01
Sb-125	1.28E-02	2.74E-02	4.82E-02	-3.76E-03	2.73E-02	4.67E-02	2.50E-02	6.02E-02	1.11E-01
I-131	1.83E-03	1.13E-02	1.97E-02	-2.32E-03	1.13E-02	1.93E-02	5.46E-03	2.18E-02	3.96E-02
Cs-134	-1.10E-03	1.00E-02	1.46E-02	5.49E-03	9.64E-03	1.48E-02	3.45E-02	1.96E-02	4.11E-02
Cs-137	-7.69E-03	1.04E-02	1.68E-02	-1.25E-02	1.07E-02	1.68E-02	5.37E-03	2.12E-02	4.10E-02
Eu-152	6.50E-03	3.86E-02	5.50E-02	1.45E-02	3.86E-02	5.17E-02	2.05E-02	6.06E-02	1.04E-01
Eu-154	-1.24E-02	2.72E-02	4.51E-02	-2.41E-03	2.71E-02	4.54E-02	-1.60E-02	4.20E-02	6.84E-02
Tl-208	1.74E-01	2.57E-02	1.73E-02	1.70E-01	2.71E-02	1.62E-02	1.93E-01	4.91E-02	8.73E-02
Bi-212	6.80E-01	2.11E-01	2.25E-01	8.18E-01	2.77E-01	2.27E-01	8.21E-01	4.94E-01	6.16E-01
Pb-212	5.80E-01	5.54E-02	3.66E-02	6.34E-01	6.15E-02	3.54E-02	5.44E-01	8.40E-02	8.91E-02
Bi-214	8.00E-01	6.52E-02	3.27E-02	7.60E-01	6.13E-02	3.15E-02	7.46E-01	1.45E-01	2.38E-01
Pb-214	7.96E-01	6.86E-02	3.97E-02	8.13E-01	6.68E-02	3.80E-02	7.39E-01	1.11E-01	8.52E-02
Ac-228	5.70E-01	6.52E-02	6.33E-02	6.03E-01	6.52E-02	5.96E-02	5.00E-01	2.60E-01	3.68E-01
Th-234	-1.34E-01	1.66E+00	6.37E-01	2.24E+00	1.85E+00	6.02E-01	9.16E-01	7.73E-01	8.40E-01
U-235	-1.97E-02	9.97E-02	3.61E-02	1.24E-01	9.60E-02	3.48E-02	-1.40E-01	1.82E-01	7.23E-02
Am-241	-1.59E-01	2.98E-01	5.03E-01	-4.04E-01	2.88E-01	4.68E-01	-4.40E-02	8.86E-02	1.47E-01

Table 10

JN-2 Sanitation Line Section C Excavation Soil Analytical Results

Analytical Parameter	RL05-1281-1713 @ 61 meters			RL05-1282-1733 @ 62 meters			RL05-1283-1734 @ 63 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	1.10E-01	1.61E-01	3.07E-01	-5.79E-02	1.56E-01	2.69E-01	8.88E-03	1.52E-01	2.77E-01
K-40	1.37E+01	1.63E+00	2.93E-01	1.24E+01	1.61E+00	3.33E-01	1.19E+01	1.58E+00	3.67E-01
Co-58	1.70E-03	1.80E-02	3.27E-02	-4.03E-02	2.07E-02	2.68E-02	-1.01E-03	2.02E-02	3.74E-02
Co-60	-8.36E-03	2.10E-02	3.64E-02	7.01E-03	1.97E-02	3.95E-02	2.16E-02	2.20E-02	4.73E-02
Zn-65	1.49E-02	5.08E-02	8.39E-02	1.13E-02	4.76E-02	7.93E-02	-6.80E-03	5.61E-02	8.63E-02
Sb-125	-3.48E-04	4.85E-02	8.85E-02	2.19E-02	5.47E-02	1.02E-01	-2.14E-02	5.63E-02	9.74E-02
I-131	1.20E-02	1.79E-02	3.31E-02	-5.86E-03	2.37E-02	4.18E-02	4.51E-03	2.64E-02	4.82E-02
Cs-134	-1.13E-03	1.88E-02	2.92E-02	8.91E-03	2.02E-02	3.33E-02	1.14E-03	2.10E-02	3.28E-02
Cs-137	-2.21E-02	2.03E-02	3.17E-02	-3.90E-02	2.24E-02	3.03E-02	-1.43E-02	2.25E-02	3.69E-02
Eu-152	-1.17E-03	5.58E-02	9.22E-02	4.15E-02	8.22E-02	1.21E-01	6.23E-02	7.92E-02	1.20E-01
Eu-154	3.21E-03	3.93E-02	6.64E-02	-2.97E-02	5.73E-02	9.56E-02	2.06E-02	5.56E-02	9.78E-02
Tl-208	1.95E-01	5.18E-02	7.55E-02	2.01E-01	4.60E-02	7.92E-02	1.67E-01	4.88E-02	7.99E-02
Bi-212	3.93E-01	3.14E-01	6.15E-01	7.40E-01	3.81E-01	5.28E-01	3.00E-01	3.68E-01	6.90E-01
Pb-212	6.17E-01	8.41E-02	6.50E-02	4.68E-01	8.92E-02	1.45E-01	6.06E-01	9.86E-02	1.60E-01
Bi-214	7.15E-01	1.42E-01	1.93E-01	8.90E-01	1.08E-01	7.83E-02	7.58E-01	1.04E-01	6.47E-02
Pb-214	8.14E-01	9.89E-02	7.25E-02	8.55E-01	1.06E-01	8.19E-02	7.80E-01	1.08E-01	9.31E-02
Ac-228	5.83E-01	1.69E-01	2.84E-01	5.76E-01	1.35E-01	2.68E-01	6.65E-01	1.93E-01	3.21E-01
Th-234	9.27E-01	7.34E-01	7.35E-01	-9.69E-01	3.22E+00	1.36E+00	2.44E+00	3.45E+00	1.36E+00
U-235	9.47E-03	1.49E-01	6.55E-02	1.03E-01	2.04E-01	7.74E-02	-7.08E-02	2.02E-01	7.89E-02
Am-241	-1.20E-01	7.92E-02	1.22E-01	-1.59E-01	5.82E-01	1.01E+00	-1.86E-01	6.08E-01	1.06E+00

Analytical Parameter	RL05-1284-1735 @ 64 meters			RL05-1285-1736 @ 65 meters			RL05-1286-1737 @ 66 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-5.47E-02	1.59E-01	2.74E-01	2.26E-02	1.58E-01	2.88E-01	-1.37E-01	1.71E-01	2.80E-01
K-40	1.34E+01	1.67E+00	2.84E-01	1.45E+01	1.81E+00	2.91E-01	1.42E+01	1.76E+00	2.74E-01
Co-58	-8.73E-03	1.98E-02	3.46E-02	-5.32E-03	1.88E-02	3.39E-02	5.51E-03	1.77E-02	3.40E-02
Co-60	-7.68E-03	2.13E-02	3.73E-02	1.28E-02	2.04E-02	4.23E-02	-8.74E-03	2.09E-02	3.64E-02
Zn-65	2.18E-02	4.64E-02	7.98E-02	2.77E-02	4.67E-02	8.30E-02	-1.07E-02	5.67E-02	8.53E-02
Sb-125	6.18E-03	5.81E-02	1.04E-01	-1.41E-02	5.68E-02	9.93E-02	-1.84E-02	5.40E-02	9.36E-02
I-131	-2.24E-02	2.62E-02	4.35E-02	7.29E-03	2.55E-02	4.69E-02	2.34E-03	2.58E-02	4.64E-02
Cs-134	7.27E-03	1.93E-02	3.14E-02	1.28E-02	1.98E-02	3.38E-02	5.54E-03	2.04E-02	3.26E-02
Cs-137	-5.23E-03	1.95E-02	3.37E-02	-3.17E-02	2.19E-02	3.14E-02	-6.47E-03	2.07E-02	3.54E-02
Eu-152	-8.94E-03	8.11E-02	1.07E-01	-5.91E-03	7.91E-02	1.19E-01	-7.37E-02	7.98E-02	1.10E-01
Eu-154	-1.80E-02	5.78E-02	9.74E-02	4.88E-02	5.57E-02	9.99E-02	-2.44E-04	5.66E-02	9.70E-02
Tl-208	1.85E-01	4.45E-02	7.53E-02	1.86E-01	4.76E-02	8.09E-02	1.42E-01	4.33E-02	7.16E-02
Bi-212	7.43E-01	5.62E-01	5.02E-01	8.95E-01	5.67E-01	4.97E-01	8.94E-01	4.19E-01	4.61E-01
Pb-212	4.79E-01	9.94E-02	1.47E-01	5.44E-01	9.04E-02	7.74E-02	5.86E-01	9.67E-02	1.44E-01
Bi-214	7.99E-01	1.06E-01	6.72E-02	7.81E-01	1.04E-01	7.53E-02	7.69E-01	1.08E-01	3.65E-02
Pb-214	7.73E-01	1.00E-01	8.81E-02	7.45E-01	1.08E-01	8.71E-02	8.79E-01	1.09E-01	7.61E-02
Ac-228	6.26E-01	1.17E-01	1.43E-01	7.23E-01	1.20E-01	1.44E-01	5.17E-01	1.64E-01	2.80E-01
Th-234	-4.87E-01	3.14E+00	1.38E+00	3.18E-01	3.27E+00	1.34E+00	3.94E+00	3.63E+00	1.35E+00
U-235	7.48E-02	1.99E-01	7.18E-02	2.36E-01	2.12E-01	7.69E-02	1.30E-01	2.03E-01	7.11E-02
Am-241	-5.12E-01	5.84E-01	9.73E-01	-2.54E-01	6.04E-01	1.04E+00	-5.71E-01	5.95E-01	9.84E-01

Table 10

JN-2 Sanitation Line Section C Excavation Soil Analytical Results

Analytical Parameter	RL05-1287-1738 @ 67 meters			RL05-1288-1739 @ 68 meters			RL05-1289-1740 @ 69 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.22E-02	1.66E-01	2.92E-01	1.14E-01	1.73E-01	3.22E-01	9.67E-02	1.74E-01	3.23E-01
K-40	1.34E+01	1.67E+00	2.70E-01	1.33E+01	1.66E+00	2.28E-01	1.28E+01	1.62E+00	3.31E-01
Co-58	-1.25E-02	1.97E-02	3.36E-02	-8.76E-03	1.61E-02	2.79E-02	-1.19E-03	2.08E-02	3.79E-02
Co-60	7.64E-03	1.95E-02	3.89E-02	1.43E-02	1.94E-02	4.03E-02	1.28E-03	1.62E-02	3.20E-02
Zn-65	8.73E-03	4.65E-02	7.64E-02	-1.08E-02	5.10E-02	7.67E-02	1.46E-02	5.32E-02	8.72E-02
Sb-125	2.68E-02	5.47E-02	1.02E-01	2.84E-02	5.22E-02	9.75E-02	-3.12E-02	5.48E-02	9.28E-02
I-131	-8.10E-03	2.35E-02	4.13E-02	-4.37E-02	2.53E-02	3.81E-02	3.72E-03	2.48E-02	4.51E-02
Cs-134	-3.46E-03	1.97E-02	2.94E-02	-8.74E-03	2.15E-02	3.08E-02	-1.31E-02	2.26E-02	3.15E-02
Cs-137	-2.64E-02	2.00E-02	2.93E-02	2.20E-03	1.98E-02	3.56E-02	-4.21E-03	1.90E-02	3.31E-02
Eu-152	5.25E-02	7.69E-02	1.10E-01	1.72E-02	8.08E-02	1.02E-01	2.58E-02	8.07E-02	1.10E-01
Eu-154	2.68E-02	5.35E-02	9.42E-02	-1.23E-02	5.61E-02	9.50E-02	1.21E-02	5.66E-02	9.81E-02
Tl-208	1.71E-01	4.45E-02	3.29E-02	1.69E-01	4.24E-02	6.98E-02	1.37E-01	4.05E-02	3.57E-02
Bi-212	8.03E-01	4.23E-01	4.38E-01	9.98E-01	5.43E-01	4.88E-01	7.71E-01	5.26E-01	5.18E-01
Pb-212	5.38E-01	9.02E-02	1.44E-01	5.95E-01	8.59E-02	7.35E-02	5.07E-01	9.20E-02	8.93E-02
Bi-214	7.07E-01	9.51E-02	6.13E-02	9.23E-01	1.06E-01	6.99E-02	8.08E-01	1.05E-01	6.67E-02
Pb-214	7.46E-01	9.58E-02	7.56E-02	9.36E-01	1.12E-01	8.06E-02	7.55E-01	1.07E-01	9.38E-02
Ac-228	5.74E-01	1.66E-01	2.78E-01	6.75E-01	1.80E-01	2.97E-01	6.16E-01	1.21E-01	1.27E-01
Th-234	2.77E-01	3.21E+00	1.23E+00	1.23E+00	3.19E+00	1.36E+00	4.55E-01	3.14E+00	1.32E+00
U-235	4.13E-02	1.92E-01	7.24E-02	1.06E-01	1.87E-01	7.87E-02	2.35E-01	1.91E-01	7.85E-02
Am-241	8.52E-02	5.68E-01	1.01E+00	-4.23E-01	5.81E-01	9.78E-01	-1.15E-02	5.87E-01	1.03E+00

Analytical Parameter	RL05-1290-1741 @ 70 meters			RL05-1291-1742 @ 71 meters			RL05-1292-1743 @ 72 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	1.22E-01	1.64E-01	3.11E-01	1.84E-02	1.63E-01	2.94E-01	-4.75E-02	1.51E-01	2.62E-01
K-40	1.32E+01	1.65E+00	2.87E-01	1.29E+01	1.61E+00	2.28E-01	1.39E+01	1.72E+00	3.17E-01
Co-58	-1.79E-02	1.96E-02	3.20E-02	2.68E-03	1.82E-02	3.42E-02	-6.48E-03	1.90E-02	3.37E-02
Co-60	-1.00E-03	2.01E-02	3.74E-02	5.99E-03	2.11E-02	4.07E-02	-1.06E-02	2.31E-02	3.97E-02
Zn-65	-3.64E-02	6.29E-02	8.71E-02	-1.57E-02	5.51E-02	8.13E-02	-3.01E-02	4.94E-02	6.76E-02
Sb-125	-1.19E-02	5.47E-02	9.58E-02	7.07E-03	5.16E-02	9.33E-02	-1.22E-02	5.51E-02	9.63E-02
I-131	1.38E-02	2.52E-02	4.70E-02	-6.44E-03	2.49E-02	4.35E-02	-1.63E-02	2.51E-02	4.24E-02
Cs-134	-6.75E-03	2.04E-02	2.97E-02	2.35E-02	2.01E-02	3.55E-02	1.23E-02	2.02E-02	3.37E-02
Cs-137	-7.42E-03	2.19E-02	3.72E-02	-6.36E-03	2.14E-02	3.66E-02	-1.23E-02	1.82E-02	2.97E-02
Eu-152	2.45E-03	7.88E-02	1.05E-01	-3.90E-02	7.66E-02	9.87E-02	1.63E-02	7.65E-02	1.07E-01
Eu-154	1.75E-02	5.57E-02	9.70E-02	2.08E-03	5.35E-02	9.20E-02	-1.70E-02	5.52E-02	9.30E-02
Tl-208	1.66E-01	4.11E-02	7.32E-02	1.91E-01	4.68E-02	3.27E-02	1.43E-01	4.60E-02	3.61E-02
Bi-212	5.24E-01	3.03E-01	6.14E-01	9.54E-01	3.95E-01	4.54E-01	5.24E-01	3.48E-01	4.86E-01
Pb-212	6.22E-01	9.63E-02	1.51E-01	5.37E-01	8.89E-01	1.42E-01	5.10E-01	9.05E-02	1.44E-01
Bi-214	6.59E-01	9.46E-02	6.45E-02	7.84E-01	1.00E-01	6.62E-02	7.45E-01	1.00E-01	7.65E-02
Pb-214	7.56E-01	9.66E-02	8.55E-02	7.76E-01	9.81E-02	7.88E-02	7.59E-01	1.04E-01	8.05E-02
Ac-228	3.72E-01	1.80E-01	2.71E-01	6.52E-01	1.98E-01	3.00E-01	5.68E-01	1.55E-01	2.68E-01
Th-234	-1.29E+00	3.18E+00	1.30E+00	8.29E-02	3.08E+00	1.29E+00	-1.07E+00	3.07E+00	1.26E+00
U-235	1.41E-01	1.97E-01	6.60E-02	5.89E-02	1.95E-01	7.18E-02	7.24E-02	1.93E-01	7.07E-02
Am-241	-1.95E-01	5.60E-01	9.68E-01	6.72E-02	5.67E-01	1.01E+00	9.96E-02	5.49E-01	9.79E-01

Table 10

JN-2 Sanitation Line Section C Excavation Soil Analytical Results

Analytical Parameter	RL05-1293-1744 @ 73 meters			RL05-1339-1774 @ 74 meters			RL05-1340-1775 @ 75 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.63E-01	1.61E-01	2.57E-01	3.26E-03	1.25E-01	2.29E-01	4.59E-02	1.45E-01	2.69E-01
K-40	1.36E+01	1.70E+00	3.74E-01	1.40E+01	1.61E+00	2.77E-01	1.41E+01	1.63E+00	2.73E-01
Co-58	-1.47E-02	1.86E-02	3.10E-02	-1.64E-02	1.97E-02	3.12E-02	-2.56E-03	1.63E-02	2.87E-02
Co-60	-1.28E-02	1.86E-02	3.09E-02	-1.52E-02	1.58E-02	2.42E-02	-8.01E-03	2.11E-02	3.66E-02
Zn-65	-1.36E-02	5.63E-02	8.41E-02	-1.96E-02	5.08E-02	7.38E-02	2.02E-02	4.67E-02	7.90E-02
Sb-125	-1.99E-02	5.43E-02	9.39E-02	-9.26E-03	4.35E-02	7.78E-02	-1.83E-02	4.29E-02	7.55E-02
I-131	-2.27E-02	2.44E-02	4.01E-02	-5.28E-04	1.94E-02	3.32E-02	-9.57E-04	1.74E-02	3.01E-02
Cs-134	-1.19E-04	1.78E-02	2.77E-02	-4.96E-03	1.78E-02	2.85E-02	-2.72E-03	1.70E-02	2.60E-02
Cs-137	-4.57E-04	1.93E-02	3.45E-02	-1.14E-02	1.68E-02	2.84E-02	-1.59E-02	1.90E-02	3.13E-02
Eu-152	-4.71E-04	7.82E-02	1.17E-01	1.36E-03	5.48E-02	8.86E-02	-3.67E-02	5.57E-02	7.78E-02
Eu-154	-9.45E-03	5.39E-02	9.18E-02	2.38E-02	3.85E-02	6.54E-02	2.67E-02	3.87E-02	6.62E-02
Tl-208	1.69E-01	4.74E-02	3.65E-02	1.74E-01	4.75E-02	3.20E-02	1.69E-01	4.89E-02	7.15E-02
Bi-212	8.79E-01	4.62E-01	3.64E-01	8.02E-01	4.69E-01	4.11E-01	5.65E-01	3.38E-01	6.59E-01
Pb-212	5.46E-01	9.54E-02	1.53E-01	5.60E-01	8.07E-02	6.05E-02	5.65E-01	7.80E-02	6.97E-02
Bi-214	7.74E-01	9.93E-02	6.85E-02	7.47E-01	9.42E-02	6.26E-02	7.45E-01	9.85E-02	6.16E-02
Pb-214	7.73E-01	1.04E-01	8.72E-02	7.79E-01	9.06E-02	6.73E-02	7.46E-01	9.09E-02	5.78E-02
Ac-228	6.31E-01	1.78E-01	2.88E-01	5.09E-01	1.74E-01	2.61E-01	6.20E-01	1.48E-01	2.73E-01
Th-234	-2.12E+00	3.23E+00	1.34E+00	7.48E-01	6.53E-01	7.69E-01	2.53E-01	6.18E-01	7.37E-01
U-235	2.07E-01	1.95E-01	7.20E-02	1.07E-01	1.39E-01	6.06E-02	1.98E-01	1.38E-01	6.13E-02
Am-241	4.81E-01	5.68E-01	1.05E+00	-5.61E-02	.-703	1.14E-01	-2.11E-02	7.51E-02	1.25E-01

Analytical Parameter	RL05-1341-1776 @ 76 meters			RL05-1342-1777 @ 77 meters			RL05-1343-1778 @ 78 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-3.14E-03	1.31E-01	2.38E-01	1.23E-01	1.74E-01	3.30E-01	-7.64E-02	1.26E-01	2.16E-01
K-40	1.19E+01	1.44E+00	2.77E-01	1.31E+01	1.67E+00	4.65E-01	1.34E+01	1.58E+00	2.73E-01
Co-58	1.05E-02	1.88E-02	3.17E-02	-9.00E-03	2.19E-02	3.79E-02	-5.21E-03	1.73E-02	2.97E-02
Co-60	-5.65E-03	1.83E-02	3.53E-02	-1.88E-02	2.28E-02	3.69E-02	1.02E-02	2.03E-02	4.00E-02
Zn-65	3.95E-02	5.03E-02	8.64E-02	-2.80E-02	6.29E-02	9.24E-02	-1.92E-02	4.95E-02	7.20E-02
Sb-125	7.95E-03	4.56E-02	8.39E-02	-1.13E-02	5.56E-02	9.63E-02	2.20E-02	4.76E-02	8.97E-02
I-131	-4.58E-03	1.69E-02	2.86E-02	1.99E-03	2.26E-02	4.02E-02	1.34E-03	1.75E-02	3.07E-02
Cs-134	-2.91E-03	1.69E-02	2.57E-02	-8.92E-03	2.42E-02	3.63E-02	-6.06E-03	1.83E-02	2.71E-02
Cs-137	-2.48E-02	1.74E-02	2.61E-02	-1.12E-03	1.96E-02	3.65E-02	-4.64E-03	1.94E-02	3.45E-02
Eu-152	5.46E-03	5.21E-02	8.30E-02	1.55E-02	6.10E-02	1.03E-01	7.21E-02	5.44E-02	8.67E-02
Eu-154	-6.15E-03	3.76E-02	6.13E-02	-5.53E-03	4.27E-02	7.07E-02	5.41E-03	3.94E-02	6.54E-02
Tl-208	1.84E-01	4.73E-02	7.01E-02	1.75E-01	4.81E-02	8.40E-02	1.99E-01	4.55E-02	7.42E-02
Bi-212	5.23E-01	4.72E-01	3.99E-01	4.34E-01	3.34E-01	6.92E-01	7.37E-01	3.50E-01	5.40E-01
Pb-212	5.51E-01	7.62E-02	5.96E-02	5.86E-01	7.92E-02	7.44E-02	5.40E-01	7.35E-02	5.83E-02
Bi-214	7.31E-01	1.00E-01	6.01E-02	7.48E-01	1.15E-01	7.34E-02	6.57E-01	1.22E-01	1.85E-01
Pb-214	7.46E-01	9.21E-02	6.49E-02	7.19E-01	1.10E-01	8.00E-02	6.85E-01	8.55E-02	6.98E-02
Ac-228	3.75E-01	1.49E-01	2.32E-01	6.51E-01	1.79E-01	3.28E-01	6.26E-01	1.65E-01	2.77E-01
Th-234	7.25E-01	6.46E-01	6.77E-01	1.45E+00	7.28E-01	6.61E-01	7.98E-01	6.68E-01	7.61E-01
U-235	7.57E-02	1.35E-01	5.83E-02	3.82E-02	1.72E-01	6.96E-02	-3.10E-02	1.43E-01	6.25E-02
Am-241	-5.45E-02	7.05E-02	1.14E-01	-2.21E-02	9.39E-02	1.41E-01	-3.86E-02	7.12E-02	1.17E-01

Table 10
JN-2 Sanitation Line Section C Excavation Soil Analytical Results

Analytical Parameter	RL05-1344-1779 @ 79 meters			RL05-1345-1780 @ 80 meters			RL05-1346-1781 @ 81 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.50E-01	1.80E-01	2.82E-01	2.70E-02	1.32E-01	2.43E-01	-1.49E-01	1.93E-01	3.05E-01
K-40	1.36E+01	1.73E+00	4.19E-01	1.32E+01	1.55E+00	2.31E-01	1.20E+01	1.59E+00	3.32E-01
Co-58	1.66E-02	2.41E-02	4.74E-02	-5.10E-03	1.71E-02	2.92E-02	-5.79E-04	2.37E-02	4.31E-02
Co-60	2.05E-02	2.23E-02	5.02E-02	-1.39E-02	1.73E-02	2.77E-02	8.30E-03	1.67E-02	3.82E-02
Zn-65	2.05E-02	6.08E-02	1.05E-01	1.51E-02	4.33E-02	7.25E-02	-3.01E-02	5.67E-02	8.13E-02
Sb-125	1.36E-02	5.69E-02	1.04E-01	1.57E-02	4.74E-02	8.80E-02	5.83E-03	5.65E-02	1.02E-01
I-131	-5.44E-03	2.20E-02	3.79E-02	1.35E-02	1.68E-02	3.12E-02	2.09E-02	2.12E-02	4.13E-02
Cs-134	1.05E-02	1.77E-02	3.25E-02	1.39E-02	1.84E-02	3.13E-02	1.24E-02	2.17E-02	3.83E-02
Cs-137	-7.23E-04	2.24E-02	4.13E-02	4.27E-03	1.77E-02	3.32E-02	-6.35E-03	2.31E-02	4.12E-02
Eu-152	-2.01E-02	6.32E-02	1.03E-01	9.42E-03	5.25E-02	8.75E-02	1.23E-02	6.35E-02	1.07E-01
Eu-154	1.37E-02	4.40E-02	7.48E-02	5.66E-03	3.67E-02	6.10E-02	-3.71E-03	4.52E-02	7.50E-02
Tl-208	1.89E-01	5.47E-02	3.86E-02	1.81E-01	3.99E-02	2.99E-02	1.64E-01	5.53E-02	8.38E-02
Bi-212	6.87E-01	4.75E-01	5.48E-01	4.37E-01	3.03E-01	5.89E-01	3.94E-01	3.38E-01	6.09E-01
Pb-212	7.01E-01	7.92E-02	7.24E-02	4.30E-01	1.02E-01	1.26E-01	5.52E-01	8.16E-02	6.97E-02
Bi-214	7.20E-01	1.35E-01	2.29E-01	7.00E-01	1.00E-01	5.71E-02	7.91E-01	1.12E-01	8.40E-02
Pb-214	8.08E-01	1.04E-01	7.53E-02	7.06E-01	9.13E-02	6.35E-02	7.50E-01	1.02E-01	8.52E-02
Ac-228	5.35E-01	1.99E-01	3.38E-01	6.53E-01	1.59E-01	2.59E-01	5.45E-01	1.86E-01	3.29E-01
Th-234	7.06E-01	7.87E-01	8.95E-01	8.11E-01	5.56E-01	6.10E-01	7.23E-01	7.84E-01	8.81E-01
U-235	-3.83E-02	1.70E-01	7.39E-02	1.01E-01	1.33E-01	6.12E-02	1.00E-01	1.69E-01	7.34E-02
Am-241	-4.74E-02	8.93E-02	1.48E-01	-6.36E-03	7.79E-02	1.17E-01	3.40E-02	9.06E-02	1.57E-01

Analytical Parameter	RL05-1347-1782 @ 82 meters			RL05-1348-1783 @ 83 meters			RL05-1349-1784 @ 84 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	2.15E-01	1.36E-01	2.78E-01	-1.80E-02	1.65E-01	2.47E-01	-6.76E-03	1.42E-01	2.56E-01
K-40	1.29E+01	1.53E+00	2.84E-01	1.16E+01	1.56E+00	3.88E-01	1.33E+01	1.56E+00	2.73E-01
Co-58	-8.49E-03	1.68E-02	2.79E-02	-6.65E-03	1.89E-02	3.32E-02	4.69E-03	1.59E-02	2.98E-02
Co-60	1.11E-02	1.81E-02	3.68E-02	2.74E-03	2.37E-02	4.63E-02	-4.00E-03	1.53E-02	2.77E-02
Zn-65	4.98E-03	4.89E-02	7.81E-02	-2.35E-02	6.77E-02	1.01E-01	1.72E-02	5.06E-02	8.33E-02
Sb-125	-3.55E-03	4.63E-02	8.38E-02	1.14E-02	5.80E-02	1.04E-01	1.48E-02	4.47E-02	8.39E-02
I-131	-1.38E-02	1.92E-02	3.10E-02	3.48E-03	1.90E-02	3.45E-02	4.68E-03	1.71E-02	3.06E-02
Cs-134	6.04E-03	1.78E-02	2.92E-02	9.29E-03	1.97E-02	3.43E-02	1.72E-02	1.87E-02	3.26E-02
Cs-137	-1.52E-02	1.87E-02	3.10E-02	-2.25E-02	2.45E-02	3.97E-02	5.21E-03	2.02E-02	3.76E-02
Eu-152	-1.27E-02	4.87E-02	7.94E-02	-1.96E-02	6.13E-02	1.00E-01	-5.11E-02	5.74E-02	8.35E-02
Eu-154	-1.05E-02	3.40E-02	5.53E-02	4.79E-03	4.20E-02	7.05E-02	-1.60E-02	3.95E-02	6.35E-02
Tl-208	1.73E-01	4.48E-02	6.88E-02	1.75E-01	5.30E-02	8.24E-02	1.63E-01	4.82E-02	6.94E-02
Bi-212	4.84E-01	3.09E-01	6.08E-01	9.32E-01	4.84E-01	5.87E-01	7.12E-01	4.10E-01	4.60E-01
Pb-212	6.01E-01	8.07E-02	5.91E-02	5.66E-01	8.14E-02	7.24E-02	6.24E-01	8.49E-02	5.98E-02
Bi-214	6.94E-01	9.58E-02	5.67E-02	6.77E-01	1.06E-01	4.94E-02	6.56E-01	1.25E-01	1.83E-01
Pb-214	7.38E-01	8.78E-02	5.68E-02	7.30E-01	9.79E-02	8.41E-02	7.85E-01	1.01E-01	6.96E-02
Ac-228	5.80E-01	1.13E-01	1.24E-01	5.38E-01	1.57E-01	3.01E-01	5.98E-01	1.60E-01	2.65E-01
Th-234	4.61E-01	6.26E-01	7.31E-01	1.16E+00	8.26E-01	8.36E-01	4.73E-01	6.31E-01	6.99E-01
U-235	5.42E-02	1.43E-01	6.07E-02	1.68E-01	1.64E-01	6.93E-02	-4.16E-02	1.43E-01	6.38E-01
Am-241	-3.75E-02	7.25E-02	1.19E-01	-7.58E-02	8.38E-02	1.35E-01	-4.06E-03	7.45E-02	1.26E-01

Table 10

JN-2 Sanitation Line Section C Excavation Soil Analytical Results

Analytical Parameter	RL05-1350-1790 @ 85 meters			RL05-1351-1791 @ 86 meters			RL05-1352-1792 @ 87 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	1.98E-02	1.64E-01	2.90E-01	-3.03E-02	7.63E-02	1.28E-01	-1.04E-02	8.25E-02	1.41E-01
K-40	1.16E+01	1.48E+00	3.66E-01	1.29E+01	1.39E+00	1.40E-01	1.33E+01	1.44E+00	1.55E-01
Co-58	-1.35E-02	2.00E-02	3.30E-02	-8.68E-03	8.68E-03	1.42E-02	-1.87E-02	9.57E-03	1.40E-02
Co-60	-2.32E-02	2.29E-02	3.56E-02	1.10E-02	9.27E-03	1.78E-02	5.02E-03	1.08E-02	1.94E-02
Zn-65	1.45E-02	4.84E-02	8.40E-02	5.52E-04	2.68E-02	3.99E-02	-2.22E-02	2.99E-02	4.07E-02
Sb-125	7.80E-03	4.80E-02	8.65E-02	-1.09E-02	2.63E-02	4.43E-02	3.07E-04	2.79E-02	4.80E-02
I-131	7.03E-03	1.86E-02	3.41E-02	-2.96E-03	1.02E-02	1.74E-02	-5.08E-03	1.07E-02	1.82E-02
Cs-134	2.00E-03	1.87E-02	3.05E-02	-1.15E-03	9.65E-03	1.41E-02	-3.61E-04	1.00E-02	1.47E-02
Cs-137	-3.09E-02	2.07E-02	2.99E-02	-6.67E-03	9.70E-03	1.57E-02	-4.99E-03	1.04E-02	1.72E-02
Eu-152	-4.39E-02	5.31E-02	8.35E-02	-2.95E-03	3.93E-02	5.26E-02	1.21E-02	4.16E-02	5.85E-02
Eu-154	-1.28E-02	3.81E-02	6.21E-02	-1.76E-02	2.77E-02	4.56E-02	1.09E-02	2.89E-02	4.89E-02
Tl-208	1.44E-01	4.65E-02	7.29E-02	1.80E-01	2.56E-02	1.59E-02	1.67E-01	2.58E-02	1.71E-02
Bi-212	4.64E-01	5.20E-01	3.91E-01	4.46E-01	2.26E-01	2.26E-01	7.34E-01	2.58E-01	2.32E-01
Pb-212	3.94E-01	7.29E-02	1.23E-01	5.52E-01	5.50E-02	3.40E-02	5.53E-01	6.43E-02	3.73E-02
Bi-214	5.83E-01	9.48E-02	7.15E-02	7.60E-01	6.05E-02	3.03E-02	7.58E-01	6.42E-02	3.34E-02
Pb-214	6.27E-01	8.31E-02	6.96E-02	7.76E-01	6.60E-02	3.91E-02	7.95E-01	6.82E-02	4.12E-02
Ac-228	4.26E-01	1.59E-01	2.75E-01	6.06E-01	6.50E-02	6.53E-02	5.80E-01	6.43E-02	6.84E-02
Th-234	4.39E-01	6.12E-01	7.06E-01	1.33E+00	1.73E+00	6.72E-01	7.03E-01	1.72E+00	6.97E-01
U-235	1.26E-01	1.50E-01	6.65E-02	5.85E-02	9.64E-02	3.59E-02	6.88E-02	1.03E-01	3.83E-02
Am-241	-2.78E-02	7.29E-02	1.22E-01	-2.33E-01	3.01E-01	5.04E-01	-2.54E-01	3.11E-01	5.19E-01

Analytical Parameter	RL05-1353-1793 @ 88 meters			RL05-1354-1794 @ 89 meters			RL05-1355-1795 @ 90 meters		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	5.72E-03	6.34E-02	1.10E-01	-1.25E-02	7.73E-02	1.31E-01	-3.00E-02	7.23E-02	1.21E-01
K-40	1.18E+01	1.27E+00	1.11E-01	1.24E+01	1.34E+00	1.48E-01	1.31E+01	1.40E+00	1.24E-01
Co-58	-6.27E-03	8.13E-03	1.36E-02	-8.27E-03	8.16E-03	1.33E-02	-1.92E-03	8.20E-03	1.43E-02
Co-60	-1.61E-03	9.14E-03	1.56E-02	-5.34E-03	9.20E-03	1.52E-02	2.88E-03	1.01E-02	1.79E-02
Zn-65	-2.25E-02	2.51E-02	3.34E-02	1.10E-02	2.25E-02	3.49E-02	-1.45E-02	2.56E-02	3.58E-02
Sb-125	1.37E-03	2.34E-02	4.04E-02	1.63E-02	2.51E-02	4.42E-02	-1.75E-03	2.51E-02	4.30E-02
I-131	-2.04E-03	9.13E-03	1.56E-02	-1.19E-03	9.28E-03	1.60E-02	-1.63E-03	9.75E-03	1.67E-02
Cs-134	1.98E-03	8.53E-03	1.28E-02	-1.45E-03	8.72E-03	1.27E-02	-3.60E-03	9.36E-03	1.33E-02
Cs-137	-7.82E-03	8.84E-03	1.41E-02	-1.65E-02	9.94E-03	1.50E-02	-1.37E-02	9.80E-03	1.50E-02
Eu-152	5.14E-03	3.38E-02	4.45E-02	-2.19E-02	3.78E-02	4.94E-02	8.79E-04	3.69E-02	4.86E-02
Eu-154	1.26E-03	2.38E-02	4.00E-02	2.24E-03	2.65E-02	4.45E-02	2.47E-02	2.62E-02	4.48E-02
Tl-208	1.48E-01	2.30E-02	1.38E-02	1.75E-01	2.60E-02	1.49E-02	1.72E-01	2.50E-02	1.46E-02
Bi-212	5.88E-01	2.34E-01	1.88E-01	6.46E-01	2.13E-01	2.05E-01	5.27E-01	1.96E-01	2.08E-01
Pb-212	4.72E-01	4.65E-02	3.12E-02	5.10E-01	5.00E-02	3.41E-02	5.43E-01	5.19E-02	3.28E-02
Bi-214	6.46E-01	5.37E-02	2.59E-02	7.52E-01	5.93E-02	2.91E-02	6.76E-01	5.84E-02	2.88E-02
Pb-214	6.44E-01	5.72E-02	3.23E-02	7.04E-01	6.06E-02	3.72E-02	7.08E-01	5.95E-01	3.48E-02
Ac-228	4.44E-01	5.25E-02	5.70E-02	6.10E-01	6.13E-02	5.84E-02	5.81E-01	6.27E-01	6.13E-02
Th-234	2.08E-01	1.39E+00	5.58E-01	1.65E+00	1.65E+00	6.17E-01	2.51E-01	1.51E+00	5.83E-01
U-235	5.48E-02	8.47E-02	3.11E-02	4.23E-02	9.22E-02	3.35E-02	8.09E-02	9.20E-02	3.29E-02
Am-241	-2.64E-02	2.53E-01	4.33E-01	-3.24E-01	2.74E-01	4.51E-01	-1.15E-01	2.70E-01	4.58E-01

Table 11

JN-2 Sanitation Line Section B Sidewall Analytical Results

Analytical Parameter	RL05-1385-1818 @ 120'			RL05-1387-1820 @ 140'			RL05-1389-1822 @ 160'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.03E-01	1.42E-01	2.35E-01	-6.42E-02	1.69E-01	2.90E-01	-5.51E-02	1.26E-01	2.15E-01
K-40	1.37E+01	1.70E+00	2.82E-01	1.37E+01	1.73E+00	2.94E-01	1.24E+01	1.53E+00	2.48E-01
Co-58	-3.12E-03	1.47E-02	2.70E-02	-8.25E-03	1.81E-02	3.18E-02	-6.89E-03	1.48E-02	2.58E-02
Co-60	-2.15E-03	2.06E-02	3.75E-02	3.90E-04	1.84E-02	3.48E-02	-2.58E-04	1.62E-02	3.00E-02
Zn-65	-4.57E-02	5.65E-02	7.36E-02	-1.57E-02	6.41E-02	9.49E-02	-2.49E-02	4.48E-02	6.24E-02
Sb-125	-1.26E-02	5.31E-02	9.29E-02	-1.95E-02	5.25E-02	9.09E-02	2.93E-03	4.69E-02	8.37E-02
I-131	2.66E-04	2.13E-02	3.81E-02	1.82E-03	2.00E-02	3.62E-02	-5.35E-03	1.78E-02	3.10E-02
Cs-134	6.13E-03	1.85E-02	3.02E-02	-6.03E-03	2.04E-02	2.99E-02	-5.72E-04	1.64E-02	2.51E-02
Cs-137	-1.40E-02	2.11E-02	3.44E-02	8.82E-03	2.12E-02	3.93E-02	-8.30E-03	1.83E-02	3.05E-02
Eu-152	-6.86E-03	7.46E-02	1.07E-01	-6.82E-02	7.97E-02	1.06E-01	5.33E-03	6.80E-02	9.79E-02
Eu-154	-4.37E-04	5.22E-02	8.98E-02	-3.91E-02	5.49E-02	9.05E-02	3.05E-02	4.69E-02	8.25E-02
Tl-208	1.53E-01	4.43E-02	7.11E-02	1.84E-01	4.53E-02	7.80E-02	1.69E-01	3.98E-02	6.53E-02
Bi-212	2.68E-01	3.02E-01	5.76E-01	7.86E-01	4.67E-01	4.43E-01	7.59E-01	3.89E-01	3.88E-01
Pb-212	5.84E-01	8.59E-02	6.92E-02	5.31E-01	9.14E-02	1.48E-01	3.78E-01	8.14E-02	1.22E-01
Bi-214	6.36E-01	8.51E-02	7.43E-02	7.30E-01	9.78E-02	3.70E-02	6.01E-01	8.59E-02	4.99E-02
Pb-214	7.66E-01	9.27E-02	7.99E-02	7.54E-01	1.04E-01	7.20E-02	6.10E-01	8.25E-02	6.96E-02
Ac-228	4.92E-01	1.62E-01	2.73E-01	6.93E-01	1.24E-01	1.29E-01	5.76E-01	9.34E-02	1.20E-01
Th-234	-6.18E-02	3.00E+00	1.27E+00	-1.14E+00	3.23E+00	1.33E+00	-4.94E-01	2.71E+00	1.09E+00
U-235	-7.66E-02	1.91E-01	7.57E-02	2.20E-01	1.95E-01	7.33E-02	1.48E-02	1.72E-01	6.28E-02
Am-241	-2.51E-01	5.47E-01	9.38E-01	2.20E-01	5.82E-01	1.05E+00	-2.82E-01	4.94E-01	8.39E-01

Analytical Parameter	RL05-1391-1824 @ 180'			RL05-1393-1826 @ 200'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.39E-02	7.13E-02	1.20E-01	-2.25E-02	7.75E-02	1.31E-01
K-40	1.18E+01	1.27E+00	1.46E-01	1.29E+01	1.40E+00	1.58E-01
Co-58	-1.22E-02	8.36E-03	1.31E-02	-3.77E-03	1.01E-02	1.48E-02
Co-60	-1.04E-02	9.18E-03	1.43E-02	-8.87E-03	1.03E-02	1.66E-02
Zn-65	1.35E-02	2.30E-02	3.58E-02	4.26E-03	2.50E-02	3.77E-02
Sb-125	1.34E-02	2.45E-02	4.31E-02	1.48E-02	2.79E-02	4.89E-02
I-131	-1.53E-03	9.37E-03	1.61E-02	1.07E-03	1.02E-02	1.77E-02
Cs-134	-5.34E-04	9.26E-03	1.35E-02	-2.38E-03	1.01E-02	1.45E-02
Cs-137	-3.11E-03	9.33E-03	1.55E-02	-1.08E-02	1.01E-02	1.58E-02
Eu-152	-1.23E-02	3.60E-02	4.68E-02	8.38E-03	3.83E-02	5.24E-02
Eu-154	-4.01E-03	2.63E-02	4.22E-02	1.46E-02	2.68E-02	4.55E-02
Tl-208	1.36E-01	2.14E-02	1.50E-02	1.65E-01	2.60E-02	1.59E-02
Bi-212	6.50E-01	1.85E-01	1.88E-01	6.22E-01	2.19E-01	2.15E-01
Pb-212	5.00E-01	4.94E-02	3.18E-02	6.44E-01	6.24E-02	3.50E-02
Bi-214	6.77E-01	5.57E-02	2.86E-02	8.37E-01	6.43E-02	3.24E-02
Pb-214	6.94E-01	5.76E-02	3.30E-02	8.40E-01	6.79E-02	3.83E-02
Ac-228	5.29E-01	5.65E-02	5.73E-02	5.49E-01	5.79E-02	6.11E-02
Th-234	-4.57E-01	1.45E+00	5.76E-01	1.47E+00	1.66E+00	6.39E-01
U-235	-3.42E-02	8.76E-02	3.16E-02	-2.30E-02	9.57E-02	3.62E-02
Am-241	-6.91E-02	2.61E-01	4.46E-01	-2.16E-01	2.83E-01	4.74E-01

Table 11

JN-2 Sanitation Line Section B Sidewall Analytical Results

Analytical Parameter	RL05-1384-1817 @ 110'			RL05-1386-1819 @ 130'			RL05-1388-1821 @ 150'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	1.88E-02	1.62E-01	2.92E-01	-8.96E-03	1.44E-01	2.66E-01	-9.38E-02	1.42E-01	2.37E-01
K-40	1.38E+01	1.72E+00	2.74E-01	1.24E+01	1.53E+00	2.24E-01	1.43E+01	1.71E+00	2.42E-01
Co-58	-1.40E-02	1.84E-02	3.08E-02	-2.35E-03	1.59E-02	2.90E-02	-1.29E-02	1.77E-02	2.97E-02
Co-60	7.79E-03	2.22E-02	4.01E-02	-1.78E-02	1.86E-02	2.87E-02	4.07E-03	1.65E-02	3.20E-02
Zn-65	3.74E-02	4.39E-02	8.08E-02	-1.00E-02	5.17E-02	7.75E-02	-1.84E-02	4.76E-02	6.88E-02
Sb-125	8.45E-03	5.66E-02	1.02E-01	1.46E-02	5.35E-02	9.69E-02	2.15E-02	4.66E-02	8.64E-02
I-131	-9.51E-03	2.26E-02	3.89E-02	-2.19E-02	1.87E-02	3.00E-02	1.08E-02	1.89E-02	3.51E-02
Cs-134	1.42E-02	1.79E-02	3.14E-02	-2.13E-03	1.70E-02	2.57E-02	-8.72E-04	1.57E-02	2.40E-02
Cs-137	-2.58E-02	1.82E-02	2.56E-02	-1.08E-02	2.00E-02	3.32E-02	-3.55E-03	1.75E-02	3.04E-02
Eu-152	3.86E-02	7.41E-02	1.05E-01	1.83E-02	7.34E-02	9.37E-02	5.49E-03	7.56E-02	9.88E-02
Eu-154	9.32E-03	5.24E-02	9.11E-02	2.66E-02	4.96E-02	8.73E-02	4.20E-02	5.41E-02	9.52E-02
Tl-208	1.81E-01	3.78E-02	3.43E-02	1.51E-01	3.85E-02	3.48E-02	1.56E-01	3.51E-02	6.34E-02
Bi-212	2.38E-01	3.44E-01	6.35E-01	5.39E-01	2.80E-01	5.68E-01	8.05E-01	5.00E-01	3.83E-01
Pb-212	6.04E-01	9.57E-02	1.55E-01	4.82E-01	8.33E-02	1.31E-01	6.00E-01	8.66E-02	6.40E-02
Bi-214	6.29E-01	9.06E-02	6.60E-02	6.88E-01	9.53E-02	6.04E-02	6.55E-01	8.42E-02	5.70E-02
Pb-214	7.09E-01	1.03E-01	8.13E-02	7.36E-01	9.97E-02	7.01E-02	6.80E-01	1.02E-01	6.42E-02
Ac-228	6.42E-01	1.20E-01	1.16E-01	6.17E-01	1.70E-01	2.66E-01	6.25E-01	1.02E-01	1.08E-01
Th-234	2.70E+00	3.38E+00	1.22E+00	1.43E+00	2.99E+00	1.21E+00	-2.16E+00	2.93E+00	1.21E+00
U-235	8.84E-02	1.87E-01	7.47E-02	-1.67E-02	1.86E-01	7.10E-02	2.20E-02	1.82E-01	6.53E-02
Am-241	-3.46E-01	5.63E-01	9.56E-01	-6.15E-01	5.15E-01	8.35E-01	2.56E-01	5.35E-01	9.60E-01

Analytical Parameter	RL05-1390-1823 @ 170'			RL05-1392-1825 @ 190'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	5.13E-02	1.63E-01	2.94E-01	-3.54E-02	.-0787	1.32E-01
K-40	1.17E+01	1.49E+00	3.92E-01	1.33E+01	1.43E+00	1.37E-01
Co-58	-1.43E-02	1.73E-02	2.76E-02	-3.51E-03	9.17E-03	1.58E-02
Co-60	-8.50E-03	2.07E-02	3.70E-02	-8.26E-03	1.06E-02	1.71E-02
Zn-65	3.00E-02	5.43E-02	9.65E-02	-1.26E-02	2.73E-02	3.85E-02
Sb-125	2.93E-02	4.48E-02	8.63E-02	1.98E-02	2.57E-02	4.58E-02
I-131	-6.20E-03	1.83E-02	3.12E-02	-2.99E-03	1.04E-02	1.77E-02
Cs-134	2.55E-03	1.63E-02	2.74E-02	-7.87E-04	9.84E-03	1.41E-02
Cs-137	-1.26E-02	2.03E-02	3.44E-02	-8.51E-03	1.08E-02	1.73E-02
Eu-152	-2.24E-02	5.36E-02	8.68E-02	-2.32E-03	3.87E-02	5.07E-02
Eu-154	2.50E-02	3.71E-02	6.43E-02	-1.95E-03	2.72E-02	4.56E-02
Tl-208	1.45E-01	4.51E-02	7.18E-02	1.68E-01	2.60E-02	1.70E-02
Bi-212	3.36E-01	3.01E-01	6.11E-01	5.55E-01	1.92E-01	2.23E-01
Pb-212	4.67E-01	9.47E-02	1.72E-01	5.66E-01	6.50E-02	3.48E-02
Bi-214	4.32E-01	6.32E-02	5.68E-02	6.95E-01	5.73E-02	3.06E-02
Pb-214	4.97E-01	7.75E-02	7.62E-02	7.33E-01	6.46E-02	3.45E-02
Ac-228	4.06E-01	1.48E-01	2.60E-01	5.99E-01	8.01E-02	5.66E-02
Th-234	2.51E-01	5.62E-01	7.13E-01	1.15E+00	1.64E+00	6.23E-01
U-235	6.68E-02	1.47E-01	5.53E-02	-1.89E-03	9.78E-02	3.43E-02
Am-241	-3.55E-02	7.12E-02	1.18E-01	-2.64E-01	2.88E-01	4.79E-01

Table 12

JN-2 Sanitation Line Section C Excavation Sidewall Analytical Results

Analytical Parameter	RL05-1395-1828 @ 220'			RL05-1397-1830 @ 240'			RL05-1399-1832 @ 260'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	2.32E-02	7.66E-02	1.33E-01	-3.71E-02	7.50E-02	1.26E-01	8.83E-03	7.63E-02	1.32E-01
K-40	1.27E+01	1.37E+00	1.29E-01	1.29E+01	1.40E+00	1.26E-01	1.34E+01	1.45E+00	1.39E-01
Co-58	-6.54E-03	8.81E-03	1.48E-02	-1.66E-03	8.89E-03	1.55E-02	3.46E-03	9.99E-03	1.57E-02
Co-60	2.00E-03	9.21E-03	1.64E-02	7.20E-03	8.90E-03	1.67E-02	2.92E-03	1.03E-02	1.83E-02
Zn-65	2.71E-02	2.55E-02	4.06E-02	6.03E-03	2.41E-02	3.68E-02	-1.45E-02	2.92E-02	4.11E-02
Sb-125	-1.70E-02	2.46E-02	4.10E-02	-2.34E-03	2.60E-02	4.45E-02	6.11E-03	2.63E-02	4.58E-02
I-131	4.67E-03	1.02E-02	1.81E-02	5.08E-03	1.04E-02	1.83E-02	-3.06E-03	1.07E-02	1.83E-02
Cs-134	4.11E-04	9.59E-03	1.42E-02	-3.69E-03	1.04E-02	1.53E-02	3.19E-03	9.89E-03	1.49E-02
Cs-137	-4.10E-03	1.12E-02	1.59E-02	-1.22E-02	9.80E-03	1.52E-02	4.70E-03	1.07E-02	1.63E-02
Eu-152	4.22E-03	3.76E-02	5.28E-02	5.76E-04	3.82E-02	5.08E-02	-2.32E-03	3.81E-02	5.04E-02
Eu-154	8.74E-03	2.66E-02	4.50E-02	-1.24E-02	2.71E-02	4.48E-02	-5.63E-03	2.70E-02	4.50E-02
Tl-208	1.67E-01	2.40E-02	1.66E-02	1.65E-01	2.52E-02	1.56E-02	1.64E-01	2.71E-02	1.58E-02
Bi-212	5.36E-01	2.11E-01	2.14E-01	6.09E-01	1.98E-01	2.13E-01	7.55E-01	2.29E-01	2.23E-01
Pb-212	5.03E-01	4.99E-02	3.45E-02	5.32E-01	5.10E-02	3.45E-02	5.61E-01	6.49E-02	3.54E-02
Bi-214	6.66E-01	5.68E-02	3.14E-02	6.41E-01	5.77E-02	3.31E-02	6.77E-01	6.21E-02	3.12E-02
Pb-214	7.06E-01	6.38E-02	3.62E-02	7.08E-01	6.24E-02	3.66E-02	7.22E-01	6.13E-02	3.89E-02
Ac-228	5.42E-01	6.09E-02	5.66E-02	5.17E-01	5.70E-02	5.58E-02	5.80E-01	6.26E-02	6.00E-02
Th-234	6.31E-01	1.60E+00	6.38E-01	9.40E-01	1.60E+00	6.14E-01	6.41E-01	1.54E+00	6.38E-01
U-235	3.06E-02	9.53E-02	3.51E-02	-2.44E-02	9.30E-02	3.46E-02	9.60E-02	9.54E-02	3.53E-02
Am-241	-3.99E-02	2.90E-01	4.96E-01	-2.35E-01	2.79E-01	4.66E-01	-7.83E-02	2.83E-01	4.82E-01

Analytical Parameter	RL05-1401-1834 @ 280'			RL05-1403-1836 @ 300'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.96E-02	7.60E-02	1.29E-01	2.09E-02	7.84E-02	1.33E-01
K-40	1.32E+01	1.42E+00	1.32E-01	1.39E+01	1.49E+00	1.31E-01
Co-58	-8.42E-03	9.17E-03	1.51E-02	-5.26E-03	8.91E-03	1.51E-02
Co-60	-2.46E-03	1.04E-02	1.76E-02	5.30E-03	1.06E-02	1.92E-02
Zn-65	-1.77E-02	2.79E-02	3.86E-02	4.00E-02	2.74E-02	4.41E-02
Sb-125	-1.66E-03	2.66E-02	4.56E-02	9.66E-03	2.60E-02	4.57E-02
I-131	8.38E-03	1.07E-02	1.90E-02	7.28E-03	1.11E-02	1.98E-02
Cs-134	-6.52E-03	9.61E-03	1.33E-02	3.20E-03	1.01E-02	1.52E-02
Cs-137	2.10E-03	1.03E-02	1.55E-02	-2.86E-03	1.06E-02	1.76E-02
Eu-152	-2.30E-02	3.79E-02	4.91E-02	4.35E-03	3.86E-02	5.17E-02
Eu-154	-5.70E-04	2.67E-02	4.48E-02	-4.32E-03	2.74E-02	4.58E-02
Tl-208	1.65E-01	2.58E-02	1.58E-02	1.93E-01	2.73E-02	1.56E-02
Bi-212	6.16E-01	2.84E-01	2.26E-01	5.77E-01	2.20E-01	2.33E-01
Pb-212	5.57E-01	5.44E-02	3.38E-02	6.09E-01	5.67E-02	3.57E-02
Bi-214	7.13E-01	6.02E-02	3.00E-02	6.88E-01	6.13E-02	3.24E-02
Pb-214	6.95E-01	5.82E-02	3.65E-02	6.72E-01	6.27E-02	4.11E-02
Ac-228	6.14E-01	6.18E-02	5.81E-02	5.91E-01	6.58E-02	6.72E-02
Th-234	2.90E-01	1.53E+00	6.08E-01	4.97E-02	1.61E+00	6.67E-01
U-235	6.67E-02	9.58E-02	3.46E-02	7.98E-02	2.58E-02	2.81E-02
Am-241	-3.84E-02	2.78E-01	4.77E-01	-2.46E-02	2.85E-01	4.90E-01

Table 12

JN-2 Sanitation Line Section C Excavation Sidewall Analytical Results

Analytical Parameter	RL05-1394-1827 @ 210'			RL05-1396-1829 @ 230'			RL05-1398-1831 @ 250'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.70E-02	.-769	1.30E-01	3.00E-02	7.35E-02	1.29E-01	9.46E-03	7.77E-02	1.35E-01
K-40	1.37E+01	1.47E+00	1.42E-01	1.35E+01	1.46E+00	1.29E-01	1.28E+01	1.39E+00	1.54E-01
Co-58	-1.33E-02	9.18E-03	1.43E-02	-5.50E-03	8.66E-03	1.46E-02	-1.13E-02	9.20E-03	1.47E-02
Co-60	8.77E-03	1.08E-02	1.98E-02	-2.28E-03	1.01E-02	1.72E-02	7.89E-03	1.04E-02	1.93E-02
Zn-65	-5.13E-03	2.57E-02	3.75E-02	2.54E-04	2.76E-02	4.10E-02	-4.26E-03	2.59E-02	3.80E-02
Sb-125	-2.55E-03	2.83E-02	4.85E-02	7.08E-03	2.68E-02	4.67E-02	1.44E-02	2.77E-02	4.88E-02
I-131	4.10E-03	1.07E-02	1.89E-02	1.26E-03	1.03E-02	1.79E-02	-7.10E-04	1.11E-02	1.91E-02
Cs-134	1.14E-03	1.00E-02	1.49E-02	-3.87E-03	9.79E-03	1.39E-02	3.99E-03	9.52E-03	1.46E-02
Cs-137	-5.20E-03	9.99E-03	1.64E-02	-8.62E-03	9.85E-03	1.58E-02	-6.67E-03	1.03E-02	1.68E-02
Eu-152	-4.13E-02	3.97E-02	5.29E-02	1.08E-03	3.66E-02	5.11E-02	-1.61E-02	3.97E-02	5.47E-02
Eu-154	-1.41E-02	2.77E-02	4.58E-02	1.35E-02	2.59E-02	4.40E-02	-2.55E-03	2.83E-02	4.73E-02
Tl-208	1.58E-01	2.46E-02	1.70E-02	1.85E-01	2.73E-02	1.59E-02	1.76E-01	2.55E-02	1.63E-02
Bi-212	6.18E-01	2.42E-01	2.22E-01	6.21E-01	2.22E-01	2.06E-01	1.01E+00	2.58E-01	2.14E-01
Pb-212	5.35E-01	5.26E-02	3.58E-02	5.43E-01	5.24E-02	3.46E-02	5.13E-01	5.11E-02	3.54E-02
Bi-214	6.84E-01	5.94E-02	3.20E-02	6.44E-01	5.74E-02	2.83E-02	8.04E-01	6.42E-02	3.03E-02
Pb-214	7.83E-01	6.45E-02	3.75E-02	6.61E-01	6.08E-02	3.84E-02	8.51E-01	7.04E-02	3.91E-02
Ac-228	5.87E-01	6.61E-02	6.02E-02	5.53E-01	6.26E-02	5.86E-02	5.72E-01	6.35E-02	6.36E-02
Th-234	6.16E-01	1.66E+00	6.61E-01	2.21E-01	1.56E+00	6.03E-01	1.64E+00	1.78E+00	6.61E-01
U-235	2.32E-02	9.68E-02	3.60E-02	1.33E-01	9.44E-02	3.37E-02	7.52E-02	9.99E-02	3.81E-02
Am-241	2.00E-02	2.92E-01	6.04E-01	-9.97E-03	2.86E-01	4.89E-01	-1.15E-01	2.94E-01	4.99E-01

Analytical Parameter	RL05-1400-1833 @ 270'			RL05-1402-1835 @ 290'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-3.49E-02	8.42E-02	1.42E-01	4.37E-02	7.77E-02	1.38E-01
K-40	1.36E+01	1.47E+00	1.60E-01	1.43E+01	1.54E+00	1.33E-01
Co-58	-7.43E-03	9.73E-03	1.63E-02	-4.98E-03	9.11E-03	1.55E-02
Co-60	1.47E-02	1.06E-02	2.05E-02	1.04E-02	1.07E-02	2.01E-02
Zn-65	-1.63E-02	2.91E-02	4.03E-02	-6.10E-03	2.82E-02	4.11E-02
Sb-125	1.79E-02	2.78E-02	4.94E-02	2.63E-03	2.81E-02	4.89E-02
I-131	3.04E-04	1.18E-02	2.05E-02	2.63E-03	1.14E-02	2.00E-02
Cs-134	4.69E-03	1.01E-02	1.55E-02	4.73E-03	1.05E-02	1.61E-02
Cs-137	-1.08E-02	1.08E-02	1.72E-02	7.56E-03	1.11E-02	1.74E-02
Eu-152	-4.45E-02	4.16E-02	5.41E-02	-1.05E-02	4.05E-02	5.27E-02
Eu-154	-3.62E-03	2.86E-02	4.79E-02	-4.49E-03	2.83E-02	4.74E-02
Tl-208	1.95E-01	3.05E-02	3.86E-02	1.93E-01	2.88E-02	1.69E-02
Bi-212	4.61E-01	2.15E-01	2.37E-01	5.95E-01	2.41E-01	2.29E-01
Pb-212	6.42E-01	6.72E-02	3.63E-02	6.55E-01	5.43E-02	3.67E-02
Bi-214	7.51E-01	6.24E-02	3.52E-02	6.35E-01	5.71E-02	3.26E-02
Pb-214	8.23E-01	6.95E-02	3.79E-02	7.25E-01	6.15E-02	3.98E-02
Ac-228	5.66E-01	6.71E-02	6.38E-02	6.52E-01	6.74E-02	6.43E-02
Th-234	1.38E+00	1.76E+00	6.71E-01	1.58E+00	1.77E+00	6.50E-01
U-235	9.93E-02	1.03E-01	3.75E-02	8.46E-02	9.83E-02	3.74E-02
Am-241	-1.00E-01	3.02E-01	5.13E-01	-1.98E-01	3.00E-01	5.05E-01

Table 13
JN-2 Sanitation Line Section B Summary
Section B (100 - 200')

Sample ID	Location	Collection Date	Field Screen Result (Kcpm)	Walkover Scan * (Results in Kcpm)	Dose Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)	[illegible]
RL05-1207-1612	C @ 31 meters	5/3/2005	9200	6830	28	1.75E-02	ND
RL05-1208-1613	C @ 32 meters	5/3/2005	9070	6970	30	1.60E-02	ND
RL05-1209-1614	C @ 33 meters	5/3/2005	9420	6720	32	1.93E-02	ND
RL05-1210-1615	C @ 34 meters	5/3/2005	9440	6780	34	1.86E-02	ND
RL05-1211-1616	C @ 35 meters	5/3/2005	9320	6050	28	4.61E-02	ND
RL05-1212-1617	C @ 36 meters	5/3/2005	9280	6370	34	3.37E-02	ND
RL05-1213-1618	C @ 37 meters	5/3/2005	9160	6620	32	4.49E-02	ND
RL05-1214-1619	C @ 38 meters	5/3/2005	9400	6410	36	3.45E-02	ND
RL05-1215-1620	C @ 39 meters	5/3/2005	7900	5760	38	4.28E-02	ND
RL05-1216-1621	C @ 40 meters	5/3/2005	9310	5560	30	3.34E-02	ND
RL05-1217-1622	C @ 41 meters	5/3/2005	9240	5460	32	4.68E-02	ND
RL05-1218-1623	C @ 42 meters	5/3/2005	9430	6300	36	3.31E-02	ND
RL05-1219-1624	C @ 43 meters	5/3/2005	9400	6370	32	4.14E-02	ND
RL05-1220-1625	C @ 44 meters	5/3/2005	9340	6300	28	3.64E-02	ND
RL05-1221-1626	C @ 45 meters	5/3/2005	9380	6450	38	4.84E-02	ND
RL05-1266-1662	C @ 46 meters	5/5/2005	9280	6180	28	1.82E-02	ND
RL05-1267-1663	C @ 47 meters	5/5/2005	9270	5780	26	1.75E-02	ND
RL05-1268-1664	C @ 48 meters	5/5/2005	9290	6230	24	1.77E-02	ND
RL05-1269-1665	C @ 49 meters	5/5/2005	9170	5370	26	1.76E-02	ND
RL05-1270-1666	C @ 50 meters	5/5/2005	9060	5120	24	1.85E-02	ND
RL05-1271-1667	C @ 51 meters	5/5/2005	9140	5340	26	1.68E-02	ND
RL05-1272-1686	C @ 52 meters	5/5/2005	8880	5380	24	1.73E-02	ND
RL05-1273-1687	C @ 53 meters	5/5/2005	8820	5400	26	1.64E-02	ND
RL05-1274-1688	C @ 54 meters	5/5/2005	9010	5670	22	1.61E-02	ND
RL05-1275-1689	C @ 55 meters	5/5/2005	8990	5460	24	1.62E-02	ND
RL05-1276-1690	C @ 56 meters	5/5/2005	9040	4980	22	1.43E-02	ND
RL05-1277-1691	C @ 57 meters	5/5/2005	9050	5620	20	1.66E-02	ND
RL05-1278-1693	C @ 58 meters	5/5/2005	9160	5740	22	1.68E-02	ND
RL05-1279-1694	C @ 59 meters	5/5/2005	9000	5970	24	1.68E-02	ND
RL05-1280-1712	C @ 60 meters	5/5/2005	9120	5100	24	4.10E-02	ND

* Walkover survey performed using a collimator

Table 13
JN-2 Sanitation Line Section B Summary
Section B (100 - 200')

Sample ID	Location	Collection Date	Field Screen Result (Kcpm)	Walkover Scan * (Results in cpm)	Dose Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)	
RL05-1228-1587	A O/B @ 110'	4/29/2005	9530	N/A	N/A	6.08E-02	
RL05-1229-1590	A O/B @ 120'	4/29/2005	9290	N/A	N/A	7.39E-02	
RL05-1230-1591	A O/B @ 130'	4/29/2005	9460	N/A	N/A	3.13E-02	
RL05-1231-1592	A O/B @ 140'	4/29/2005	9280	N/A	N/A	7.55E-02	
RL05-1232-1637	A O/B @ 150'	5/3/2005	9600	N/A	N/A	4.05E-02	
RL05-1233-1643	A O/B @ 160'	5/4/2005	9450	N/A	N/A	8.71E-02	
RL05-1234-1646	A O/B @ 170'	5/4/2005	9590	N/A	N/A	1.80E-02	ND
RL05-1235-1648	A O/B @ 180'	5/4/2005	9120	N/A	N/A	1.82E-02	ND
RL05-1236-1656	A O/B @ 190'	5/4/2005	9660	N/A	N/A	2.04E-02	ND
RL05-1250-1669	A O/B @ 200'	5/5/2005	9110	N/A	N/A	3.90E-02	ND
RL05-1183-1598	B O/B @ 110'	5/2/2005	8760	N/A	N/A	1.75E-02	ND
RL05-1184-1599	B O/B @ 120'	5/2/2005	8970	N/A	N/A	3.04E-02	
RL05-1185-1600	B O/B @ 130'	5/2/2005	8800	N/A	N/A	1.87E-02	ND
RL05-1186-1601	B O/B @ 140'	5/2/2005	8820	N/A	N/A	3.05E-02	
RL05-1253-1658	B O/B @ 150'	5/5/2005	9180	N/A	N/A	3.61E-02	ND
RL05-1254-1659	B O/B @ 160'	5/5/2005	8250	N/A	N/A	4.44E-02	ND
RL05-1255-1672	B O/B @ 170'	5/5/2005	8830	N/A	N/A	3.99E-02	ND
RL05-1256-1673	B O/B @ 180'	5/5/2005	8950	N/A	N/A	3.76E-02	ND
RL05-1257-1674	B O/B @ 190'	5/5/2005	9070	N/A	N/A	3.66E-02	ND
RL05-1258-1675	B O/B @ 200'	5/5/2005	8730	N/A	N/A	3.16E-02	ND
RL05-1385-1818	N. Side @ 120'	5/11/2005	8890	5320	26	3.44E-02	ND
RL05-1387-1820	N. Side @ 140'	5/11/2005	8850	5280	28	3.93E-02	ND
RL05-1389-1822	E. Side @ 160'	5/11/2005	9070	4870	20	3.05E-02	ND
RL05-1391-1824	E. Side @ 180'	5/11/2005	8980	4290	22	1.55E-02	ND
RL05-1393-1826	E. Side @ 200'	5/11/2005	9010	4370	22	1.58E-02	ND
RL05-1384-1817	S. Side @ 110'	5/11/2005	8750	5820	32	2.56E-02	ND
RL05-1386-1819	S. Side @ 130'	5/11/2005	9220	5750	30	3.32E-02	ND
RL05-1388-1821	S. Side @ 150'	5/11/2005	9270	6420	34	3.04E-02	ND
RL05-1390-1823	W. Side @ 170'	5/11/2005	8820	5110	24	3.44E-02	ND
RL05-1392-1825	W. Side @ 190'	5/11/2005	8820	5520	26	1.73E-02	ND
			Max: 9660	Max: 6970	Max: 38	Max: 8.71E-02	
			Min: 7900	Min: 4290	Min: 20	Min: 1.43E-02	
		Sample # 60	Average: 9112	Average: 5776	Average: 28	Average: 3.09E-02	
			St Dev: 306.197	St Dev: 852.116	St Dev: 4.895	St Dev: 0.016	

* Walkover survey performed using a collimator

Table 14
JN-2 Sanitation Line Result Summary
Section C (200 - 300')

Sample ID	Location	Collection Date	Field Screen Result (Kcpm)	Walkover Scan * (Results in cpm)	Dose Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)	
RL05-1281-1713	C @ 61 meters	5/5/2005	9130	5940	22	3.17E-02	ND
RL05-1282-1733	C @ 62 meters	5/6/2005	8940	5650	24	3.03E-02	ND
RL05-1283-1734	C @ 63 meters	5/6/2005	8670	5270	22	3.69E-02	ND
RL05-1284-1735	C @ 64 meters	5/6/2005	8980	5310	24	3.37E-02	ND
RL05-1285-1736	C @ 65 meters	5/6/2005	8720	5560	24	3.14E-02	ND
RL05-1286-1737	C @ 66 meters	5/6/2005	9060	5630	22	3.54E-02	ND
RL05-1287-1738	C @ 67 meters	5/6/2005	8730	5400	24	2.93E-02	ND
RL05-1288-1739	C @ 68 meters	5/6/2005	9270	5360	26	3.56E-02	ND
RL05-1289-1740	C @ 69 meters	5/6/2005	8920	5710	26	3.31E-02	ND
RL05-1290-1741	C @ 70 meters	5/6/2005	8950	5480	20	3.72E-02	ND
RL05-1291-1742	C @ 71 meters	5/6/2005	9110	5960	24	3.66E-02	ND
RL05-1292-1743	C @ 72 meters	5/6/2005	9010	5910	22	2.97E-02	ND
RL05-1293-1744	C @ 73 meters	5/6/2005	9090	4970	24	3.45E-02	ND
RL05-1339-1774	C @ 74 meters	5/10/2005	9090	5720	20	2.84E-02	ND
RL05-1340-1775	C @ 75 meters	5/10/2005	8950	5350	22	3.13E-02	ND
RL05-1341-1776	C @ 76 meters	5/10/2005	9120	5220	24	2.61E-02	ND
RL05-1342-1777	C @ 77 meters	5/10/2005	8990	5720	24	3.65E-02	ND
RL05-1343-1778	C @ 78 meters	5/10/2005	9100	6120	22	3.45E-02	ND
RL05-1344-1779	C @ 79 meters	5/10/2005	8890	4780	22	4.13E-02	ND
RL05-1345-1780	C @ 80 meters	5/10/2005	9080	5420	26	3.32E-02	ND
RL05-1346-1781	C @ 81 meters	5/10/2005	8960	6020	22	4.12E-02	ND
RL05-1347-1782	C @ 82 meters	5/10/2005	9100	5550	20	3.10E-02	ND
RL05-1348-1783	C @ 83 meters	5/10/2005	9170	5710	22	3.97E-02	ND
RL05-1349-1784	C @ 84 meters	5/10/2005	9130	5810	22	3.76E-02	ND
RL05-1350-1790	C @ 85 meters	5/10/2005	8940	5490	24	2.99E-02	ND
RL05-1351-1791	C @ 86 meters	5/10/2005	8820	5200	22	1.57E-02	ND
RL05-1352-1792	C @ 87 meters	5/10/2005	8840	5800	22	1.72E-02	ND
RL05-1353-1793	C @ 88 meters	5/10/2005	8950	5040	24	1.41E-02	ND
RL05-1354-1794	C @ 89 meters	5/10/2005	9300	5330	22	1.50E-02	ND
RL05-1355-1795	C @ 90 meters	5/10/2005	9130	5960	22	1.50E-02	ND

* Walkover survey performed using a collimator

Table 14
JN-2 Sanitation Line Section C Summary
Section C (200 - 300')

Sample ID	Location	Collection Date	Field Screen Result (Kcpm)	Walkover Scan * (Results in Kcpm)	Dose Rates (Results in µR/hr)	Cs-137 Content (Results in pCi/g)	
RL05-1251-1678	A O/B @ 210'	5/5/2005	9270	N/A	N/A	4.91E-02	ND
RL05-1252-1685	A O/B @ 220'	5/5/2005	9640	N/A	N/A	3.06E-02	ND
RL05-1298-1717	A O/B @ 230'	5/6/2005	9440	N/A	N/A	3.45E-02	ND
RL05-1299-1722	A O/B @ 240'	5/6/2005	9260	N/A	N/A	4.44E-02	ND
RL05-1300-1724	A O/B @ 250'	5/6/2005	9240	N/A	N/A	3.34E-02	ND
RL05-1301-1728	A O/B @ 260'	5/6/2005	9060	N/A	N/A	5.68E-02	ND
RL05-1302-1749	A O/B @ 270'	5/6/2005	9400	N/A	N/A	4.27E-02	ND
RL05-1319-1767	A O/B @ 280'	5/9/2005	9350	N/A	N/A	3.35E-02	ND
RL05-1320-1768	A O/B @ 290'	5/9/2005	9280	N/A	N/A	4.49E-02	ND
RL05-1317-1762	A O/B @ 300'	5/9/2005	9650	N/A	N/A	3.56E-02	ND
RL05-1259-1682	B O/B @ 210'	5/5/2005	9070	N/A	N/A	3.36E-02	ND
RL05-1260-1692	B O/B @ 220'	5/5/2005	8970	N/A	N/A	3.52E-02	ND
RL05-1294-1730	B O/B @ 230'	5/6/2005	8970	N/A	N/A	3.24E-02	ND
RL05-1295-1731	B O/B @ 240'	5/6/2005	8740	N/A	N/A	3.99E-02	ND
RL05-1296-1732	B O/B @ 250'	5/6/2005	8870	N/A	N/A	3.74E-02	ND
RL05-1323-1771	B O/B @ 260'	5/10/2005	9090	N/A	N/A	3.22E-02	ND
RL05-1324-1772	B O/B @ 270'	5/10/2005	9130	N/A	N/A	3.43E-02	ND
RL05-1325-1773	B O/B @ 280'	5/10/2005	9050	N/A	N/A	3.68E-02	ND
RL05-1326-1785	B O/B @ 290'	5/10/2005	9060	N/A	N/A	2.86E-02	ND
RL05-1327-1786	B O/B @ 300'	5/10/2005	9000	N/A	N/A	2.94E-02	ND
RL05-1395-1828	E. Side @ 220'	5/11/2005	8910	4760	20	1.59E-02	ND
RL05-1397-1830	E. Side @ 240'	5/11/2005	8950	4360	24	1.52E-02	ND
RL05-1399-1832	E. Side @ 260'	5/11/2005	8740	4390	26	1.63E-02	ND
RL05-1401-1834	E. Side @ 280'	5/11/2005	8980	4770	24	1.55E-02	ND
RL05-1403-1836	E. Side @ 300'	5/11/2005	8850	4380	24	1.76E-02	ND
RL05-1394-1827	W. Side @ 210'	5/11/2005	8950	5230	24	1.64E-02	ND
RL05-1396-1829	W. Side @ 230'	5/11/2005	8830	4870	28	1.58E-02	ND
RL05-1398-1831	W. Side @ 250'	5/11/2005	8930	4600	24	1.68E-02	ND
RL05-1400-1833	W. Side @ 270'	5/11/2005	8870	5840	22	1.72E-02	ND
RL05-1402-1835	W. Side @ 290'	5/11/2005	8820	4420	22	1.74E-02	ND
			Max: 9650	Max: 6120	Max: 28	Max: 5.68E-02	
			Min: 8670	Min: 4360	Min: 20	Min: 1.41E-02	
		Sample #: 60	Average: 9042	Average: 5350	Average: 23	Average: 3.05E-02	
			St Dev: 204.239	St Dev: 499.844	St Dev: 1.809	St Dev: 0.010	

* Walkover survey performed using a collimator

Table 15

JN-2 Sanitation Line Trench "Sidewall" Comparison Value

Area/Volume ID	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
JN-2 Sanitation Line	20	1.729

Sidewall

Number	Section	Sample Number	Cs-137 Result (pCi/g)	
1	B	RL05-1385-1818	0.0344	ND
2	B	RL05-1387-1820	0.0393	ND
3	B	RL05-1389-1822	0.0305	ND
4	B	RL05-1391-1824	0.0155	ND
5	B	RL05-1393-1826	0.0158	ND
6	B	RL05-1384-1817	0.0256	ND
7	B	RL05-1386-1819	0.0332	ND
8	B	RL05-1388-1821	0.0304	ND
9	B	RL05-1390-1823	0.0344	ND
10	B	RL05-1392-1825	0.0173	ND
11	C	RL05-1395-1828	0.0159	ND
12	C	RL05-1397-1830	0.0152	ND
13	C	RL05-1399-1832	0.0163	ND
14	C	RL05-1401-1834	0.0155	ND
15	C	RL05-1403-1836	0.0176	ND
16	C	RL05-1394-1827	0.0164	ND
17	C	RL05-1396-1829	0.0158	ND
18	C	RL05-1398-1831	0.0168	ND
19	C	RL05-1400-1833	0.0172	ND
20	C	RL05-1402-1835	0.0174	ND

Maximum	Average	Comparison Value
0.0393 (ND)	0.022025	0.03
Minimum	**Standard Deviation**	**Modified Cleanup Criteria**
0.0152 (ND)	0.01	11

ND= Non-Identified Nuclide

Comparison < Criteria
Yes

Table 16

JN-2 Sanitation Line Section B Overburden Soil Sample Results (pCi/g)

	Overburden B	Overburden A
110'	1.75E-02(ND)	6.08E-02
120'	3.04E-02	7.39E-02
130'	1.87E-02(ND)	3.13E-02
140'	3.05E-02	7.55E-02
150'	3.61E-02(ND)	4.05E-02
160'	4.44E-02(ND)	8.71E-02
170'	3.99E-02(ND)	1.80E-02(ND)
180'	3.76E-02(ND)	1.82E-02(ND)
190'	3.66E-02(ND)	2.04E-02(ND)
200'	3.16E-02(ND)	3.90E-02(ND)

100'

Table 17

JN-2 Sanitation Line Section C Overburden Soil Sample Results (pCi/g)

	Overburden B	Overburden A
210'	3.36E-02(ND)	4.91E-02(ND)
220'	3.52E-02(ND)	3.06E-02(ND)
230'	3.24E-02(ND)	3.45E-02(ND)
240'	3.99E-02(ND)	4.44E-02(ND)
250'	3.74E-02(ND)	3.34E-02(ND)
260'	3.22E-02(ND)	5.68E-02(ND)
270'	3.43E-02(ND)	4.27E-02(ND)
280'	3.68E-02(ND)	3.35E-02(ND)
290'	2.86E-02(ND)	4.49E-02(ND)
300'	2.94E-02(ND)	3.56E-02(ND)

100'

Table 18

JN-2 Sanitation Line Overburden A Soil Analytical Results

Analytical Parameter	RL05-1251-1678 @ 210'			RL05-1252-1685 @ 220'			RL05-1298-1717 @ 230'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-4.13E-03	1.74E-01	3.06E-01	-2.21E-02	1.19E-01	2.13E-01	1.68E-01	1.36E-01	2.73E-01
K-40	8.96E+00	1.27E+00	4.22E-01	1.07E+01	1.27E+00	2.68E-01	1.36E+01	1.59E+00	2.92E-01
Co-58	-2.00E-02	2.41E-02	3.85E-02	1.29E-03	1.37E-02	2.50E-02	-1.43E-02	1.81E-02	2.88E-02
Co-60	1.64E-02	2.84E-02	5.80E-02	6.98E-03	1.53E-02	3.07E-02	2.26E-03	1.75E-02	3.34E-02
Zn-65	8.53E-03	6.19E-02	1.03E-01	-1.75E-02	4.96E-02	7.24E-02	6.59E-03	5.77E-02	9.07E-02
Sb-125	3.02E-02	6.26E-02	1.16E-01	-2.82E-02	4.22E-02	7.21E-02	-1.23E-02	5.22E-02	9.24E-02
I-131	6.70E-03	2.21E-02	4.02E-02	-7.16E-03	1.78E-02	2.95E-02	1.10E-02	2.28E-02	4.08E-02
Cs-134	-4.20E-03	2.35E-02	3.66E-02	5.20E-03	1.65E-02	2.68E-02	1.37E-03	1.91E-02	2.99E-02
Cs-137	1.19E-02	2.56E-02	4.91E-02	-1.26E-02	1.85E-02	3.06E-02	2.45E-04	1.88E-02	3.45E-02
Eu-152	-4.77E-03	6.00E-02	9.98E-02	-1.07E-02	5.40E-02	7.71E-02	-2.90E-02	5.53E-02	8.83E-02
Eu-154	-2.60E-02	4.28E-02	6.85E-02	-1.42E-02	3.84E-02	6.19E-02	-6.72E-03	3.79E-02	6.20E-02
Tl-208	1.32E-01	4.74E-02	7.81E-02	1.37E-01	3.66E-02	5.96E-02	1.72E-01	4.43E-02	3.41E-02
Bi-212	8.70E-01	5.29E-01	6.55E-01	6.78E-01	3.92E-01	3.83E-01	3.23E-01	3.20E-01	6.05E-01
Pb-212	4.51E-01	6.98E-02	6.97E-02	4.35E-01	7.00E-02	6.66E-02	6.51E-01	7.60E-02	5.91E-02
Bi-214	8.41E-01	1.58E-01	2.50E-01	1.05E+00	1.10E-01	5.90E-02	9.13E-01	1.22E-01	6.20E-02
Pb-214	1.02E+00	1.15E-01	8.68E-02	1.03E+00	1.11E-01	6.05E-02	8.97E-01	1.02E-01	7.85E-02
Ac-228	4.85E-01	1.69E-01	3.16E-01	3.64E-01	1.71E-01	2.19E-01	6.32E-01	1.64E-01	2.67E-01
Th-234	1.20E+00	6.63E-01	7.80E-01	1.06E+00	6.01E-01	5.73E-01	1.05E+00	5.82E-01	7.07E-01
U-235	9.47E-02	1.71E-01	7.57E-02	3.41E-02	1.41E-01	6.27E-02	-4.31E-02	1.47E-01	6.58E-02
Am-241	4.05E-02	9.13E-02	1.44E-01	7.50E-02	7.79E-02	1.24E-01	-2.32E-03	8.72E-02	1.31E-01

Analytical Parameter	RL05-1299-1722 @ 240'			RL05-1300-1724 @ 250'			RL05-1301-1728 @ 260'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	5.77E-02	1.68E-01	3.12E-01	-1.45E-01	1.43E-01	2.33E-01	1.92E-02	1.92E-01	3.39E-01
K-40	1.10E+01	1.53E+00	4.41E-01	1.17E+01	1.42E+00	2.88E-01	1.14E+01	1.52E+00	4.13E-01
Co-58	-1.23E-02	2.25E-02	3.80E-02	-2.10E-03	1.97E-02	3.44E-02	-6.22E-03	2.39E-02	4.20E-02
Co-60	-1.05E-02	2.20E-02	3.90E-02	-5.46E-03	2.07E-02	3.65E-02	-1.71E-02	2.33E-02	3.86E-02
Zn-65	-6.47E-03	8.38E-02	1.31E-01	-5.65E-03	5.00E-02	7.70E-02	-2.11E-02	6.19E-02	9.34E-02
Sb-125	-4.03E-02	6.82E-02	1.12E-01	-4.19E-02	5.32E-02	8.99E-02	1.04E-02	5.76E-02	1.04E-01
I-131	2.30E-03	3.01E-02	5.32E-02	-1.95E-02	2.21E-02	3.47E-02	-1.44E-02	2.91E-02	4.86E-02
Cs-134	-1.11E-02	2.19E-02	3.20E-02	-1.13E-03	1.97E-02	3.03E-02	-1.68E-03	2.02E-02	3.22E-02
Cs-137	-1.24E-02	2.57E-02	4.44E-02	-1.51E-03	1.83E-02	3.34E-02	2.77E-02	2.90E-02	5.68E-02
Eu-152	-5.91E-03	6.90E-02	1.14E-01	2.40E-02	5.54E-02	8.91E-02	5.00E-02	6.39E-02	1.09E-01
Eu-154	-1.73E-02	4.77E-02	7.77E-02	-3.18E-02	3.98E-02	6.24E-02	-2.70E-02	4.64E-02	7.44E-02
Tl-208	1.52E-01	6.14E-02	8.51E-02	1.39E-01	4.18E-02	6.46E-02	1.74E-01	5.17E-02	8.60E-02
Bi-212	6.02E-01	5.60E-01	6.35E-01	5.45E-01	4.34E-01	4.39E-01	9.28E-01	4.10E-01	5.22E-01
Pb-212	5.39E-01	7.77E-02	7.15E-02	6.12E-01	8.13E-02	6.04E-02	6.14E-01	7.84E-02	6.65E-02
Bi-214	1.01E+00	1.52E-01	6.85E-02	1.09E+00	1.31E-01	6.43E-02	9.11E-01	1.36E-01	6.40E-02
Pb-214	1.20E+00	1.40E-01	9.34E-02	1.17E+00	1.14E-01	6.93E-02	1.09E+00	1.24E-01	7.62E-02
Ac-228	5.34E-01	1.65E-01	3.07E-01	4.92E-01	1.73E-01	2.68E-01	4.44E-01	1.62E-01	2.85E-01
Th-234	2.45E-01	7.68E-01	8.85E-01	9.09E-01	8.91E-01	7.49E-01	5.14E-01	7.14E-01	8.23E-01
U-235	1.21E-01	1.87E-01	8.14E-02	6.07E-02	1.50E-01	6.76E-02	1.71E-01	1.76E-01	7.30E-02
Am-241	5.47E-02	8.95E-02	1.57E-01	9.00E-02	8.59E-02	1.37E-01	-1.86E-03	9.12E-02	1.55E-01

Table 18

JN-2 Sanitation Line Overburden A Soil Analytical Results

Analytical Parameter	RL05-1302-1749 @ 270'			RL05-1319-1767 @ 280'			RL05-1320-1768 @ 290'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-6.13E-02	1.67E-01	2.91E-01	-5.22E-02	1.25E-01	2.19E-01	-3.24E-02	1.63E-01	2.81E-01
K-40	1.09E+01	1.38E+00	3.85E-01	8.90E+00	1.15E+00	2.76E-01	1.05E+01	1.41E+00	2.65E-01
Co-58	-8.79E-03	1.95E-02	3.27E-02	-3.70E-03	1.62E-02	2.82E-02	-1.19E-02	2.25E-02	3.80E-02
Co-60	-1.09E-02	2.12E-02	3.59E-02	-2.45E-03	1.57E-02	2.89E-02	3.51E-02	2.69E-02	5.74E-02
Zn-65	7.97E-04	5.96E-02	9.28E-02	-3.95E-02	4.87E-02	6.36E-02	3.31E-02	6.84E-02	1.18E-01
Sb-125	3.17E-03	5.68E-02	1.03E-01	1.92E-04	4.46E-02	8.12E-02	-7.82E-03	6.01E-02	1.04E-01
I-131	1.17E-02	2.35E-02	4.25E-02	-4.70E-03	1.67E-02	2.82E-02	-2.33E-03	2.24E-02	3.91E-02
Cs-134	5.07E-03	1.86E-02	3.04E-02	1.74E-03	1.61E-02	2.57E-02	5.52E-03	2.28E-02	3.79E-02
Cs-137	4.27E-03	2.33E-02	4.27E-02	-1.38E-02	1.99E-02	3.35E-02	-9.73E-03	2.57E-02	4.49E-02
Eu-152	3.15E-02	6.04E-02	1.02E-01	-5.09E-02	5.50E-02	8.53E-02	1.74E-02	6.43E-02	1.07E-01
Eu-154	-1.50E-02	4.41E-02	7.12E-02	-1.54E-02	3.88E-02	6.24E-02	4.64E-02	4.43E-02	7.79E-02
Tl-208	1.87E-01	5.22E-02	3.75E-02	1.10E-01	4.54E-02	3.11E-02	1.59E-01	6.08E-02	8.73E-02
Bi-212	5.40E-01	3.48E-01	4.92E-01	5.33E-01	5.00E-01	4.20E-01	7.21E-01	3.77E-01	7.92E-01
Pb-212	6.66E-01	8.42E-02	7.11E-02	4.78E-01	7.66E-02	5.48E-02	5.14E-01	9.26E-02	8.79E-02
Bi-214	1.38E+00	1.38E-01	7.42E-02	1.04E+00	1.18E-01	5.95E-02	8.91E-01	1.60E-01	2.52E-01
Pb-214	1.51E+00	1.41E-01	7.30E-02	1.07E+00	1.16E-01	5.93E-02	9.70E-01	1.21E-01	9.19E-02
Ac-228	5.68E-01	1.73E-01	2.82E-01	5.91E-01	1.66E-01	2.50E-01	5.09E-01	1.74E-01	3.16E-01
Th-234	1.09E+00	8.34E-01	8.83E-01	6.72E-01	6.48E-01	7.37E-01	9.03E-01	6.63E-01	7.23E-01
U-235	1.66E-01	1.58E-01	7.81E-02	1.44E-01	1.41E-01	6.43E-02	7.73E-02	1.71E-01	7.34E-02
Am-241	-1.12E-01	8.94E-02	1.41E-01	-5.08E-02	7.34E-02	1.20E-01	3.92E-02	9.66E-02	1.51E-01

Analytical Parameter	RL05-1317-1762 @ 300'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.38E-01	1.74E-01	2.92E-01
K-40	1.23E+01	1.47E+00	2.57E-01
Co-58	-1.18E-02	1.86E-02	3.03E-02
Co-60	-6.22E-03	2.02E-02	3.56E-02
Zn-65	-1.87E-02	5.46E-02	8.02E-02
Sb-125	3.90E-02	5.26E-02	1.00E-01
I-131	8.56E-03	2.02E-02	3.61E-02
Cs-134	-6.87E-03	2.44E-02	3.61E-02
Cs-137	-8.49E-03	2.04E-02	3.56E-02
Eu-152	1.06E-03	6.47E-02	1.07E-01
Eu-154	2.92E-02	4.55E-02	7.71E-02
Tl-208	1.91E-01	5.09E-02	3.70E-02
Bi-212	7.94E-01	4.32E-01	5.07E-01
Pb-212	6.76E-01	8.32E-02	6.46E-02
Bi-214	1.36E+00	1.46E-01	7.18E-02
Pb-214	1.43E+00	1.43E-01	8.11E-02
Ac-228	5.44E-01	1.58E-01	2.71E-01
Th-234	6.61E-02	6.98E-01	8.59E-01
U-235	2.11E-02	1.62E-01	7.59E-02
Am-241	-3.77E-02	8.80E-02	1.45E-01

Table 18

JN-2 Sanitation Line Overburden A Soil Analytical Results

Analytical Parameter	RL05-1228-1587 @ 110'			RL05-1229-1590 @ 120'			RL05-1230-1591 @ 130'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-5.91E-02	9.19E-02	1.52E-01	2.88E-02	8.74E-02	1.52E-01	-5.22E-02	8.27E-02	1.37E-01
K-40	1.13E+01	1.24E+00	1.48E-01	1.02E+01	1.13E+00	1.30E-01	1.11E+01	1.21E+00	1.49E-01
Co-58	-1.30E-02	9.84E-03	1.56E-02	-8.59E-03	8.52E-03	1.39E-02	-2.49E-03	1.09E-02	1.63E-02
Co-60	1.32E-03	1.07E-02	1.88E-02	-2.55E-03	9.97E-03	1.71E-02	-8.42E-04	9.50E-03	1.66E-02
Zn-65	-9.16E-03	2.75E-02	3.95E-02	-5.13E-03	2.57E-02	3.75E-02	1.09E-02	2.74E-02	4.21E-02
Sb-125	-9.46E-03	2.98E-02	5.05E-02	2.97E-02	2.68E-02	4.82E-02	-1.05E-02	2.95E-02	4.98E-02
I-131	2.72E-03	1.63E-02	2.84E-02	7.82E-03	1.44E-02	2.54E-02	-1.55E-02	1.60E-02	2.64E-02
Cs-134	-3.76E-03	1.07E-02	1.52E-02	-1.52E-03	9.60E-03	1.40E-02	6.71E-03	1.09E-02	1.67E-02
Cs-137	6.08E-02	1.53E-02	1.68E-02	7.39E-02	1.74E-02	1.77E-02	3.13E-02	1.64E-02	2.01E-02
Eu-152	-8.07E-03	4.22E-02	5.82E-02	-9.00E-03	3.90E-02	5.31E-02	1.63E-02	4.17E-02	5.67E-02
Eu-154	-2.20E-02	2.99E-02	4.92E-02	-1.13E-03	2.75E-02	4.61E-02	-1.87E-03	2.92E-02	4.89E-02
Tl-208	1.40E-01	2.50E-02	1.66E-02	1.44E-01	2.50E-02	1.65E-02	1.60E-01	2.52E-02	1.84E-02
Bi-212	5.40E-01	2.45E-01	2.45E-01	4.45E-01	2.16E-01	2.05E-01	5.21E-01	2.54E-01	2.38E-01
Pb-212	4.79E-01	5.05E-02	4.04E-02	5.04E-01	5.04E-02	3.54E-02	4.83E-01	5.14E-02	4.02E-02
Bi-214	1.26E+00	8.50E-02	3.11E-02	9.40E-01	7.20E-02	2.98E-02	1.21E+00	8.23E-02	3.31E-02
Pb-214	1.25E+00	9.43E-02	4.27E-02	9.45E-01	7.31E-02	3.81E-02	1.19E+00	8.89E-02	4.16E-02
Ac-228	5.14E-01	6.32E-02	6.64E-02	4.80E-01	5.59E-02	6.09E-02	4.97E-01	5.91E-02	6.90E-02
Th-234	-6.73E-01	1.79E+00	6.88E-01	1.69E+00	1.76E+00	6.28E-01	8.88E-01	1.72E+00	6.97E-01
U-235	-7.83E-04	1.07E-01	4.19E-02	3.73E-03	9.69E-02	3.61E-02	-1.49E-02	1.06E-01	4.20E-02
Am-241	-7.33E-02	3.18E-01	5.43E-01	-2.34E-01	2.91E-01	4.87E-01	-1.18E-01	3.16E-01	5.36E-01

Analytical Parameter	RL05-1231-1592 @ 140'			RL05-1232-1637 @ 150'			RL05-1233-1643 @ 160'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.82E-02	8.44E-02	1.42E-01	-3.35E-03	8.23E-02	1.40E-01	-2.23E-02	8.45E-02	1.43E-01
K-40	1.06E+01	1.16E+00	1.73E-01	1.08E+01	1.18E+00	1.40E-01	1.21E+01	1.31E+00	1.60E-01
Co-58	-1.03E-02	9.16E-03	1.48E-02	-7.17E-03	9.78E-03	1.38E-02	-9.55E-03	9.33E-03	1.52E-02
Co-60	-5.27E-03	9.92E-03	1.66E-02	-3.97E-03	1.05E-02	1.77E-02	-8.04E-03	1.03E-02	1.68E-02
Zn-65	8.58E-03	2.38E-02	3.68E-02	-2.75E-04	2.41E-02	3.59E-02	-4.21E-02	2.89E-02	3.46E-02
Sb-125	-5.14E-03	2.81E-02	4.79E-02	2.59E-02	2.63E-02	4.70E-02	-2.94E-02	2.86E-02	4.67E-02
I-131	8.88E-04	1.48E-02	2.57E-02	-4.32E-03	9.44E-03	1.60E-02	-1.44E-03	1.06E-02	1.82E-02
Cs-134	3.32E-04	1.06E-02	1.56E-02	1.74E-03	9.25E-03	1.38E-02	-2.79E-03	1.05E-02	1.51E-02
Cs-137	7.55E-02	1.74E-02	1.78E-02	4.05E-02	1.29E-02	1.75E-02	8.71E-02	2.17E-02	1.94E-02
Eu-152	1.92E-02	4.03E-02	5.47E-02	7.25E-04	4.07E-02	5.43E-02	-1.33E-02	4.09E-02	5.61E-02
Eu-154	1.66E-02	2.83E-02	4.81E-02	1.05E-03	2.85E-02	4.78E-02	1.05E-02	2.85E-02	4.83E-02
Tl-208	1.68E-01	2.70E-02	1.57E-02	1.40E-01	2.37E-02	1.75E-02	1.80E-01	2.80E-02	1.64E-02
Bi-212	4.49E-01	1.91E-01	2.21E-01	4.19E-01	2.03E-01	2.16E-01	6.36E-01	2.70E-01	2.18E-01
Pb-212	5.63E-01	5.36E-02	3.61E-02	4.23E-01	5.33E-02	3.76E-02	6.21E-01	6.00E-02	3.70E-02
Bi-214	1.03E+00	7.27E-02	3.31E-02	1.13E+00	7.83E-02	2.99E-02	9.65E-01	7.26E-02	3.24E-02
Pb-214	1.08E+00	7.98E-02	3.97E-02	1.13E+00	8.64E-02	3.84E-02	9.70E-01	7.83E-02	3.99E-02
Ac-228	4.86E-01	5.89E-02	5.79E-02	4.95E-01	5.80E-02	6.32E-02	6.35E-01	6.41E-02	6.00E-02
Th-234	1.77E+00	1.79E+00	6.63E-01	6.53E-01	1.70E+00	6.54E-01	2.45E-01	1.69E+00	6.62E-01
U-235	1.13E-01	9.97E-02	3.81E-02	4.05E-02	1.02E-01	3.90E-02	6.99E-03	1.03E-01	3.94E-02
Am-241	-3.33E-02	2.95E-01	5.05E-01	-1.59E-01	2.97E-01	5.01E-01	-1.09E-01	3.10E-01	5.27E-01

Table 18

JN-2 Sanitation Line Overburden A Soil Analytical Results

Analytical Parameter	RL05-1234-1646 @ 170'			RL05-1235-1648 @ 180'			RL05-1236-1656 @ 190'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-5.22E-02	8.28E-02	1.37E-01	-2.12E-02	7.88E-02	1.34E-01	-9.70E-03	8.63E-02	1.47E-01
K-40	1.28E+01	1.39E+00	1.51E-01	1.27E+01	1.37E+00	1.58E-01	1.29E+01	1.39E+00	1.57E-01
Co-58	7.22E-04	9.95E-03	1.53E-02	-6.09E-03	9.10E-03	1.53E-02	-1.34E-02	9.54E-03	1.50E-02
Co-60	-7.13E-04	1.17E-02	2.02E-02	9.86E-04	9.23E-03	1.65E-02	5.20E-03	1.12E-02	2.01E-02
Zn-65	-3.28E-02	2.93E-02	3.76E-02	-2.01E-03	2.66E-02	3.79E-02	-2.74E-02	3.08E-02	4.11E-02
Sb-125	8.69E-03	2.94E-02	5.12E-02	1.21E-02	2.71E-02	4.75E-02	2.77E-02	2.92E-02	5.19E-02
I-131	-3.78E-03	1.04E-02	1.76E-02	-6.89E-04	1.05E-02	1.81E-02	-4.39E-04	1.11E-02	1.90E-02
Cs-134	3.35E-05	1.11E-02	1.62E-02	-2.68E-03	1.08E-02	1.55E-02	7.07E-04	1.03E-02	1.52E-02
Cs-137	8.04E-03	1.16E-02	1.80E-02	-8.85E-03	1.13E-02	1.82E-02	1.98E-02	1.26E-02	2.04E-02
Eu-152	3.93E-02	4.27E-02	5.75E-02	-4.05E-02	4.03E-02	5.23E-02	1.79E-02	4.31E-02	5.79E-02
Eu-154	-3.23E-03	3.00E-02	5.03E-02	1.71E-03	2.78E-02	4.68E-02	1.86E-02	3.03E-02	5.15E-02
Tl-208	1.92E-01	2.89E-02	1.74E-02	1.74E-01	2.87E-02	3.76E-02	1.60E-01	2.57E-02	1.86E-02
Bi-212	5.86E-01	2.78E-01	2.36E-01	4.48E-01	1.95E-01	2.41E-01	6.05E-01	2.49E-01	2.43E-01
Pb-212	6.16E-01	5.93E-02	3.87E-02	5.43E-01	6.03E-02	3.73E-02	6.06E-01	5.75E-02	4.10E-02
Bi-214	1.05E+00	7.86E-02	3.48E-02	8.19E-01	6.87E-02	3.16E-02	1.09E+00	7.94E-02	3.20E-02
Pb-214	1.09E+00	8.62E-02	3.98E-02	8.92E-01	7.07E-02	3.61E-02	1.15E+00	8.74E-02	4.38E-02
Ac-228	6.45E-01	6.65E-02	6.82E-02	5.79E-01	6.45E-02	6.45E-02	6.29E-01	6.66E-02	7.15E-02
Th-234	4.58E-01	1.76E+00	6.95E-01	-8.16E-01	1.68E+00	6.51E-01	9.62E-01	1.82E+00	7.21E-01
U-235	1.08E-01	1.06E-01	4.08E-02	1.07E-01	9.88E-02	3.70E-02	4.58E-02	1.08E-01	4.23E-02
Am-241	-2.13E-01	3.09E-01	5.20E-01	-1.94E-01	2.96E-01	4.98E-01	-6.24E-02	3.25E-01	5.55E-01

Analytical Parameter	RL05-1250-1669 @ 200'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.62E-02	1.35E-01	2.43E-01
K-40	1.25E+01	1.49E+00	2.75E-01
Co-58	3.07E-03	1.84E-02	3.33E-02
Co-60	-9.87E-03	1.76E-02	2.97E-02
Zn-65	2.68E-02	4.34E-02	7.63E-02
Sb-125	1.30E-02	5.05E-02	9.33E-02
I-131	1.79E-03	2.00E-02	3.47E-02
Cs-134	-6.87E-03	1.87E-02	2.75E-02
Cs-137	2.25E-02	1.97E-02	3.90E-02
Eu-152	1.38E-02	5.34E-02	8.96E-02
Eu-154	5.43E-03	3.84E-02	6.39E-02
Tl-208	1.93E-01	4.69E-02	7.25E-02
Bi-212	6.42E-01	3.38E-01	3.91E-01
Pb-212	5.64E-01	7.48E-02	5.89E-02
Bi-214	7.63E-01	1.38E-01	1.95E-01
Pb-214	9.62E-01	1.10E-01	7.28E-02
Ac-228	4.86E-01	1.78E-01	2.66E-01
Th-234	4.03E-01	6.16E-01	7.32E-01
U-235	-6.81E-02	1.40E-01	6.74E-02
Am-241	-9.41E-02	7.75E-02	1.22E-01

Table 19

JN-2 Sanitation Line Overburden B Soil Analytical Results

Analytical Parameter	RL05-1183-1598 @ 110'			RL05-1184-1599 @ 120'			RL05-1185-1600 @ 130'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	6.21E-02	8.19E-02	1.46E-01	-6.70E-02	7.66E-02	1.25E-01	-8.04E-02	8.12E-02	1.32E-01
K-40	1.37E+01	1.49E+00	1.50E-01	1.06E+01	1.16E+00	1.34E-01	1.41E+01	1.52E+00	1.34E-01
Co-58	-9.04E-03	9.12E-03	1.49E-02	-9.37E-03	8.76E-03	1.42E-02	2.97E-03	9.33E-03	1.68E-02
Co-60	3.30E-03	1.04E-02	1.88E-02	-1.49E-03	9.84E-03	1.70E-02	2.81E-03	1.06E-02	1.91E-02
Zn-65	-9.83E-03	2.82E-02	4.04E-02	-1.64E-02	2.50E-02	3.44E-02	-1.52E-03	2.90E-02	4.30E-02
Sb-125	-2.54E-02	2.78E-02	4.56E-02	-5.76E-03	2.53E-02	4.30E-02	-5.38E-03	2.93E-02	5.00E-02
I-131	1.88E-03	1.07E-02	1.86E-02	4.85E-03	9.95E-03	1.75E-02	2.53E-04	1.09E-02	1.89E-02
Cs-134	4.29E-03	1.03E-02	1.58E-02	3.20E-03	8.98E-03	1.36E-02	7.36E-03	1.03E-02	1.61E-02
Cs-137	-8.25E-03	1.08E-02	1.75E-02	3.04E-02	1.31E-02	1.71E-02	-1.68E-03	1.11E-02	1.87E-02
Eu-152	-5.13E-03	3.93E-02	5.64E-02	-4.78E-03	3.72E-02	5.15E-02	-2.98E-02	4.07E-02	5.50E-02
Eu-154	6.86E-03	2.78E-02	4.71E-02	1.01E-02	2.61E-02	4.43E-02	-3.98E-03	2.83E-02	4.75E-02
Tl-208	1.70E-01	2.83E-02	1.85E-02	1.40E-01	2.26E-02	1.53E-02	1.78E-01	2.89E-02	1.66E-02
Bi-212	5.44E-01	2.75E-01	2.34E-01	4.57E-01	1.98E-01	2.25E-01	5.92E-01	2.77E-01	2.56E-01
Pb-212	6.74E-01	6.43E-02	3.86E-02	4.75E-01	4.80E-02	3.49E-02	5.85E-01	6.66E-02	3.67E-02
Bi-214	7.14E-01	6.34E-02	3.43E-02	8.28E-01	6.35E-02	3.08E-02	7.01E-01	6.27E-02	3.44E-02
Pb-214	7.59E-01	6.69E-02	4.00E-02	8.88E-01	7.06E-02	3.81E-02	7.55E-01	6.66E-02	4.18E-02
Ac-228	5.54E-01	6.24E-02	6.52E-02	4.63E-01	5.49E-02	5.76E-02	5.87E-01	6.63E-02	6.93E-02
Th-234	1.05E-01	1.69E+00	6.53E-01	-3.88E-01	1.58E+00	6.25E-01	4.78E-01	1.66E+00	6.75E-01
U-235	-1.43E-02	1.00E-01	3.68E-02	-2.38E-02	9.51E-02	3.55E-02	5.51E-02	1.01E-01	3.72E-02
Am-241	-3.02E-01	3.00E-01	4.97E-01	-1.32E-01	2.84E-01	4.80E-01	-3.99E-01	3.02E-01	4.92E-01

Analytical Parameter	RL05-1186-1601 @ 140'			RL05-1253-1658 @ 150'			RL05-1254-1659 @ 160'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-2.89E-03	7.70E-02	1.32E-01	-5.34E-02	1.70E-01	2.93E-01	9.63E-02	1.55E-01	3.02E-01
K-40	1.09E+01	1.21E+00	1.53E-01	1.38E+01	1.71E+00	2.54E-01	1.35E+01	1.74E+00	2.94E-01
Co-58	-1.12E-02	9.41E-03	1.51E-02	-1.28E-03	1.71E-02	3.15E-02	-8.53E-03	2.14E-02	3.79E-02
Co-60	-3.48E-03	1.07E-02	1.83E-02	-6.27E-03	2.28E-02	4.04E-02	9.85E-03	2.17E-02	4.47E-02
Zn-65	-6.59E-03	2.64E-02	3.84E-02	-1.58E-03	4.85E-02	7.62E-02	-3.26E-02	5.46E-02	7.47E-02
Sb-125	1.02E-04	2.76E-02	4.77E-02	-5.80E-02	5.55E-02	8.92E-02	-4.46E-02	6.16E-02	1.03E-01
I-131	5.65E-03	1.01E-02	1.79E-02	-7.22E-03	1.99E-02	3.46E-02	4.15E-03	2.60E-02	4.71E-02
Cs-134	3.88E-03	1.00E-02	1.53E-02	9.80E-03	1.92E-02	3.19E-02	2.84E-03	1.88E-02	3.06E-02
Cs-137	3.05E-02	1.56E-02	1.68E-02	-1.62E-02	2.23E-02	3.61E-02	1.16E-02	2.35E-02	4.44E-02
Eu-152	1.11E-03	3.89E-02	5.61E-02	-1.76E-03	8.67E-02	1.17E-01	-4.06E-02	8.47E-02	1.25E-01
Eu-154	9.13E-03	2.74E-02	4.65E-02	-2.74E-04	5.96E-02	1.02E-01	-1.45E-02	5.80E-02	9.88E-02
Tl-208	1.43E-01	2.45E-02	1.67E-02	1.74E-01	4.77E-02	3.51E-02	1.84E-01	4.92E-02	8.23E-02
Bi-212	5.63E-01	2.36E-01	2.37E-01	4.70E-01	4.58E-01	5.12E-01	7.92E-01	4.39E-01	4.57E-01
Pb-212	4.87E-01	5.02E-02	3.80E-02	5.54E-01	9.52E-02	1.51E-01	5.19E-01	1.06E-01	1.64E-01
Bi-214	8.37E-01	6.63E-02	3.49E-02	8.76E-01	1.08E-01	7.09E-02	6.98E-01	1.00E-01	6.80E-02
Pb-214	8.78E-01	7.40E-02	4.00E-02	9.00E-01	1.07E-01	8.69E-02	5.36E-01	9.61E-02	9.83E-02
Ac-228	4.67E-01	6.15E-02	6.29E-02	7.85E-01	1.92E-01	3.15E-01	6.59E-01	1.67E-01	3.20E-01
Th-234	-4.46E-01	1.71E+00	6.46E-01	2.20E+00	3.55E+00	1.33E+00	5.03E+00	4.02E+00	1.43E+00
U-235	-4.68E-02	1.00E-01	3.82E-02	-5.11E-02	1.95E-01	7.78E-02	-4.21E-02	1.98E-01	7.77E-02
Am-241	-8.47E-02	2.97E-01	5.07E-01	-5.71E-01	6.04E-01	1.00E+00	-2.94E-01	6.24E-01	1.07E+00

Table 19

JN-2 Sanitation Line Overburden B Soil Analytical Results

Analytical Parameter	RL05-1255-1672 @ 170'			RL05-1256-1673 @ 180'			RL05-1257-1674 @ 190'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	1.41E-02	1.26E-01	2.33E-01	-1.62E-01	1.53E-01	2.43E-01	1.46E-01	1.52E-01	2.98E-01
K-40	1.28E+01	1.62E+00	3.45E-01	1.40E+01	1.73E+00	2.73E-01	1.42E+01	1.76E+00	2.02E-01
Co-58	4.24E-03	1.81E-02	3.44E-02	1.30E-03	1.82E-02	3.39E-02	-1.15E-02	1.67E-02	2.84E-02
Co-60	-4.74E-03	2.09E-02	3.77E-02	3.55E-03	2.09E-02	4.01E-02	-1.01E-02	1.84E-02	3.16E-02
Zn-65	-3.45E-03	5.72E-02	8.81E-02	-5.02E-03	5.68E-02	8.70E-02	-2.42E-02	6.00E-02	8.63E-02
Sb-125	2.00E-02	5.58E-02	1.03E-01	1.99E-03	5.27E-02	9.48E-02	-1.92E-02	5.45E-02	9.44E-02
I-131	2.18E-03	2.12E-02	3.83E-02	-1.46E-02	2.09E-02	3.53E-02	7.74E-03	2.07E-02	3.83E-02
Cs-134	4.12E-03	1.93E-02	3.08E-02	-4.11E-03	1.93E-02	2.88E-02	-3.69E-03	2.28E-02	3.40E-02
Cs-137	1.28E-02	2.12E-02	3.99E-02	3.20E-03	2.08E-02	3.76E-02	-9.02E-03	2.17E-02	3.66E-02
Eu-152	4.75E-02	7.20E-02	1.02E-01	5.28E-02	7.52E-02	1.07E-01	4.64E-03	7.68E-02	1.17E-01
Eu-154	4.58E-02	5.03E-02	9.07E-02	-1.05E-02	5.21E-02	8.86E-02	2.61E-02	5.28E-02	9.33E-02
Tl-208	1.47E-01	3.68E-02	3.51E-02	1.81E-01	4.38E-02	7.60E-02	1.79E-01	4.29E-02	2.86E-02
Bi-212	4.84E-01	4.09E-01	4.30E-01	6.89E-01	5.29E-01	5.17E-01	7.50E-01	5.40E-01	4.66E-01
Pb-212	5.54E-01	8.26E-02	7.03E-02	5.56E-01	1.05E-01	8.82E-02	5.43E-01	9.30E-02	1.52E-01
Bi-214	6.46E-01	9.07E-02	7.18E-02	7.38E-01	9.71E-02	6.57E-02	6.70E-01	9.77E-02	6.79E-02
Pb-214	5.49E-01	1.03E-01	1.77E-01	8.08E-01	9.98E-02	8.07E-02	6.78E-01	9.87E-02	7.90E-02
Ac-228	7.13E-01	1.66E-01	2.92E-01	6.21E-01	1.57E-01	2.79E-01	6.87E-01	1.24E-01	1.22E-01
Th-234	1.08E+00	2.97E+00	1.23E+00	9.07E-01	3.40E+00	1.30E+00	1.81E+00	3.31E+00	1.30E+00
U-235	1.18E-01	1.81E-01	6.99E-02	-9.85E-02	1.91E-01	7.62E-02	-3.04E-04	2.00E-01	7.44E-02
Am-241	-5.96E-02	5.25E-01	9.24E-01	8.80E-02	5.70E-01	1.02E+00	-4.29E-01	5.97E-01	1.01E+00

Analytical Parameter	RL05-1258-1675 @ 200'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-4.04E-02	1.45E-01	2.54E-01
K-40	1.26E+01	1.60E+00	3.15E-01
Co-58	3.04E-03	1.88E-02	3.54E-02
Co-60	3.81E-04	2.02E-02	3.81E-02
Zn-65	-1.97E-02	5.01E-02	7.25E-02
Sb-125	3.09E-02	5.28E-02	9.93E-02
I-131	-1.90E-02	2.10E-02	3.46E-02
Cs-134	-3.99E-03	1.55E-02	2.32E-02
Cs-137	-9.40E-03	1.89E-02	3.16E-02
Eu-152	-6.15E-02	7.33E-02	1.15E-01
Eu-154	-2.56E-02	5.18E-02	8.65E-02
Tl-208	1.83E-01	4.52E-02	7.60E-02
Bi-212	4.41E-01	3.19E-01	6.26E-01
Pb-212	5.65E-01	9.34E-02	1.44E-01
Bi-214	6.91E-01	9.31E-02	4.66E-02
Pb-214	6.85E-01	9.26E-02	7.37E-02
Ac-228	7.38E-01	1.68E-01	3.01E-01
Th-234	-5.67E-01	3.09E+00	1.30E+00
U-235	1.10E-01	1.94E-01	6.87E-02
Am-241	7.50E-02	5.64E-01	1.00E+00

Table 19

JN-2 Sanitation Line Overburden B Soil Analytical Results

Analytical Parameter	RL05-1259-1682 @ 210'			RL05-1260-1692 @ 220'			RL05-1294-1730 @ 230'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	4.59E-02	1.50E-01	2.76E-01	-6.84E-03	1.62E-01	2.87E-01	-3.87E-02	1.77E-01	3.09E-01
K-40	1.30E+01	1.65E+00	2.81E-01	1.27E+01	1.60E+00	3.14E-01	1.30E+01	1.64E+00	3.75E-01
Co-58	-8.80E-03	1.80E-02	3.15E-02	-1.03E-02	1.90E-02	3.29E-02	-1.26E-02	1.93E-02	3.29E-02
Co-60	3.09E-03	2.03E-02	3.88E-02	7.47E-03	2.07E-02	4.08E-02	1.41E-04	2.28E-02	3.81E-02
Zn-65	2.80E-02	4.83E-02	8.34E-02	-1.44E-03	4.85E-02	7.61E-02	2.19E-02	5.35E-02	8.96E-02
Sb-125	5.09E-03	5.49E-02	9.87E-02	7.81E-03	5.22E-02	9.48E-02	5.90E-03	5.69E-02	1.03E-01
I-131	3.92E-03	1.95E-02	3.57E-02	-9.22E-04	2.02E-02	3.62E-02	1.27E-02	2.59E-02	4.81E-02
Cs-134	-9.51E-03	2.01E-02	2.85E-02	-5.04E-04	1.85E-02	2.85E-02	-8.94E-03	2.26E-02	3.24E-02
Cs-137	-5.57E-03	1.95E-02	3.36E-02	-1.07E-02	2.11E-02	3.52E-02	-1.26E-02	1.98E-02	3.24E-02
Eu-152	-6.22E-03	7.58E-02	1.10E-01	-9.98E-02	7.93E-02	1.01E-01	2.76E-02	7.98E-02	1.13E-01
Eu-154	-4.11E-04	5.28E-02	9.07E-02	-9.88E-03	5.56E-02	9.44E-02	-7.18E-03	5.68E-02	9.69E-02
Tl-208	1.40E-01	4.86E-02	6.87E-02	1.51E-01	4.67E-02	7.29E-02	1.76E-01	4.40E-02	7.72E-02
Bi-212	4.78E-01	8.38E-02	1.43E-01	3.49E-01	3.22E-01	6.17E-01	6.58E-01	4.82E-01	4.28E-01
Pb-212	1.12E+00	3.68E-01	4.31E-01	5.40E-01	6.83E-02	7.71E-02	4.72E-01	1.12E-01	1.51E-01
Bi-214	7.46E-01	9.57E-02	6.56E-02	6.96E-01	9.21E-02	6.41E-02	9.69E-01	1.13E-01	7.40E-02
Pb-214	7.89E-01	1.09E-01	8.29E-02	7.70E-01	9.72E-02	7.72E-02	9.01E-01	1.13E-01	8.04E-02
Ac-228	6.01E-01	1.18E-01	1.19E-01	6.37E-01	1.55E-01	2.81E-01	5.88E-01	1.76E-01	2.88E-01
Th-234	-1.32E-01	3.09E+00	1.26E+00	-1.61E+00	3.40E+00	1.38E+00	2.53E+00	3.41E+00	1.29E+00
U-235	2.87E-03	1.95E-01	7.09E-02	7.50E-02	1.99E-01	7.60E-02	-2.15E-03	2.07E-01	7.71E-02
Am-241	3.96E-01	5.72E-01	1.04E+00	4.91E-01	6.11E-01	1.11E+00	-4.60E-01	5.83E-01	9.76E-01

Analytical Parameter	RL05-1295-1731 @ 240'			RL05-1296-1732 @ 250'			RL05-1323-1771 @ 260'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	5.49E-02	1.63E-01	3.00E-01	3.13E-02	1.72E-01	3.11E-01	2.29E-02	1.37E-01	2.51E-01
K-40	1.39E+01	1.73E+00	2.76E-01	1.30E+01	1.69E+00	3.34E-01	1.29E+01	1.61E+00	2.70E-01
Co-58	-2.04E-02	2.06E-02	3.30E-02	-8.78E-03	2.15E-02	3.74E-02	-1.17E-02	1.75E-02	2.98E-02
Co-60	6.32E-03	2.03E-02	3.99E-02	-1.20E-02	2.70E-02	4.76E-02	1.56E-02	1.91E-02	3.94E-02
Zn-65	-3.16E-02	5.68E-02	7.90E-02	2.70E-02	5.21E-02	9.62E-02	-4.01E-02	5.71E-02	7.67E-02
Sb-125	6.34E-03	5.48E-02	9.89E-02	-2.28E-02	5.04E-02	8.51E-02	3.74E-02	4.78E-02	9.16E-02
I-131	4.79E-03	2.32E-02	4.26E-02	-7.93E-03	2.48E-02	4.24E-02	-2.93E-03	1.90E-02	3.37E-02
Cs-134	-6.67E-03	1.88E-02	2.73E-02	2.16E-02	1.89E-02	3.71E-02	5.99E-03	1.68E-02	2.77E-02
Cs-137	-4.25E-04	2.27E-02	3.99E-02	-1.93E-02	2.29E-02	3.74E-02	1.42E-03	1.78E-02	3.22E-02
Eu-152	1.73E-03	7.39E-02	1.15E-01	-2.53E-02	5.66E-02	9.19E-02	2.16E-02	7.54E-02	1.10E-01
Eu-154	-4.77E-03	5.14E-02	8.81E-02	-1.50E-02	4.03E-02	6.57E-02	1.60E-02	5.10E-02	8.90E-02
Tl-208	1.53E-01	4.95E-02	7.53E-02	1.54E-01	5.41E-02	8.44E-02	1.91E-01	3.96E-02	3.44E-02
Bi-212	6.21E-01	4.95E-01	4.14E-01	6.20E-01	6.02E-01	6.14E-01	9.61E-01	4.31E-01	4.00E-01
Pb-212	4.55E-01	1.10E-01	1.47E-01	5.22E-01	7.32E-02	6.98E-02	5.65E-01	8.79E-02	7.25E-02
Bi-214	6.73E-01	8.77E-02	6.63E-02	5.76E-01	1.01E-01	5.42E-02	6.59E-01	9.24E-02	5.98E-02
Pb-214	7.44E-01	9.94E-02	7.99E-02	7.07E-01	1.05E-01	8.01E-02	8.18E-01	9.86E-02	7.75E-02
Ac-228	6.56E-01	1.70E-01	2.94E-01	5.61E-01	1.91E-01	3.35E-01	5.44E-01	1.09E-01	1.15E-01
Th-234	-1.13E+00	3.14E+00	1.23E+00	4.39E-01	7.02E-01	7.89E-01	9.50E-01	3.09E+00	1.27E+00
U-235	3.54E-02	1.87E-01	6.80E-02	4.09E-02	1.62E-01	7.11E-02	-1.43E-01	1.94E-01	7.27E-02
Am-241	6.54E-02	5.59E-01	9.94E-01	7.38E-02	8.48E-02	1.51E-01	-1.06E-01	5.65E-01	9.84E-01

Table 19
JN-2 Sanitation Line Overburden B Soil Analytical Results

Analytical Parameter	RL05-1324-1772 @ 270'			RL05-1325-1773 @ 280'			RL05-1326-1785 @ 290'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-1.17E-01	1.55E-01	2.56E-01	-5.11E-02	1.64E-01	2.85E-01	-4.95E-02	1.51E-01	2.60E-01
K-40	1.25E+01	1.58E+00	3.17E-01	1.43E+01	1.78E+00	3.48E-01	1.27E+01	1.61E+00	3.21E-01
Co-58	-2.39E-02	1.89E-02	2.90E-02	-3.44E-03	1.75E-02	3.20E-02	6.52E-03	1.77E-02	3.40E-02
Co-60	-2.16E-03	2.07E-02	3.78E-02	8.30E-03	1.65E-02	3.48E-02	3.25E-03	1.81E-02	3.49E-02
Zn-65	-3.34E-02	5.49E-02	7.53E-02	2.32E-02	5.98E-02	9.86E-02	3.04E-02	4.54E-02	7.98E-02
Sb-125	-1.91E-02	5.54E-02	9.57E-02	-1.09E-02	4.96E-02	8.76E-02	1.96E-02	4.97E-02	9.21E-02
I-131	8.68E-06	1.87E-02	3.37E-02	-1.10E-02	2.23E-02	3.83E-02	1.43E-02	2.09E-02	3.90E-02
Cs-134	-8.44E-04	2.12E-02	3.22E-02	-2.21E-03	2.29E-02	3.45E-02	-7.73E-03	1.82E-02	2.60E-02
Cs-137	1.16E-05	1.92E-02	3.43E-02	-1.32E-02	2.23E-02	3.68E-02	-4.21E-03	1.64E-02	2.86E-02
Eu-152	-3.62E-02	7.86E-02	1.03E-01	-1.81E-02	7.82E-02	1.03E-01	2.27E-02	7.38E-02	1.04E-01
Eu-154	-1.30E-02	5.32E-02	9.02E-02	-5.45E-02	5.54E-02	8.97E-02	2.09E-03	5.06E-02	8.73E-02
Tl-208	1.48E-01	4.14E-02	6.95E-02	1.66E-01	4.30E-02	7.42E-02	1.57E-01	4.16E-02	3.24E-02
Bi-212	1.03E+00	3.54E-01	4.82E-01	7.37E-01	3.34E-01	5.85E-01	5.02E-01	4.00E-01	4.28E-01
Pb-212	5.37E-01	8.51E-02	6.83E-02	5.85E-01	9.54E-02	1.58E-01	5.12E-01	8.67E-01	1.39E-01
Bi-214	6.73E-01	9.36E-02	6.98E-02	6.82E-01	1.03E-01	8.12E-02	6.75E-01	9.11E-02	6.63E-02
Pb-214	8.14E-01	9.45E-02	8.69E-02	7.41E-01	9.81E-02	7.57E-02	6.90E-01	9.35E-02	7.26E-02
Ac-228	5.43E-01	1.50E-01	2.67E-01	4.48E-01	1.76E-01	2.81E-01	5.45E-01	1.40E-01	2.57E-01
Th-234	1.58E+00	3.10E+00	1.29E+00	1.63E+00	3.26E+00	1.31E+00	-7.86E-01	2.97E+00	1.12E+00
U-235	5.40E-02	1.83E-01	7.24E-02	-9.79E-02	2.00E-01	7.30E-02	-9.34E-03	1.82E-01	6.93E-02
Am-241	-5.82E-01	5.48E-01	8.99E-01	1.13E-01	5.62E-01	1.01E+00	7.16E-02	5.39E-01	9.58E-01

Analytical Parameter	RL05-1327-1786 @ 300'		
	Result (pCi/g)	2 σ (pCi/g)	MDA (pCi/g)
Be-7	-7.12E-02	1.53E-01	2.60E-01
K-40	1.25E+01	1.56E+00	2.87E-01
Co-58	1.45E-03	1.58E-02	2.98E-02
Co-60	8.29E-03	1.92E-02	3.81E-02
Zn-65	-2.06E-02	4.91E-02	7.06E-02
Sb-125	1.04E-03	5.44E-02	9.70E-02
I-131	8.75E-03	2.01E-02	3.72E-02
Cs-134	1.47E-02	1.93E-02	3.28E-02
Cs-137	-9.14E-03	1.76E-02	2.94E-02
Eu-152	-1.61E-02	7.64E-02	1.06E-01
Eu-154	-1.36E-02	5.28E-02	8.95E-02
Tl-208	1.94E-01	4.53E-02	7.53E-02
Bi-212	9.42E-01	4.18E-01	4.48E-01
Pb-212	5.21E-01	8.74E-02	1.43E-01
Bi-214	6.47E-01	9.14E-02	6.37E-02
Pb-214	6.24E-01	8.69E-02	8.28E-02
Ac-228	6.08E-01	1.14E-01	1.23E-01
Th-234	6.00E-02	2.93E+00	1.24E+00
U-235	-1.31E-01	1.88E-01	6.91E-02
Am-241	1.45E-01	5.25E-01	9.42E-01

Table 20

JN-2 Sanitation Line Trench Overburden "A" Comparison Value

Area/Volume ID	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
JN-2 Sanitation Line	20	1.729

Overburden "A"

Number	Section	Sample Number	Cs-137 Result (pCi/g)	
1	B	RL05-1228-1587	0.0608	
2	B	RL05-1229-1590	0.0739	
3	B	RL05-1230-1591	0.0313	
4	B	RL05-1231-1592	0.0755	
5	B	RL05-1232-1637	0.0405	
6	B	RL05-1233-1643	0.0871	
7	B	RL05-1234-1646	0.018	ND
8	B	RL05-1235-1648	0.0182	ND
9	B	RL05-1236-1656	0.0204	ND
10	B	RL05-1250-1669	0.039	ND
11	C	RL05-1251-1678	0.0491	ND
12	C	RL05-1252-1685	0.0306	ND
13	C	RL05-1298-1717	0.0345	ND
14	C	RL05-1299-1722	0.0444	ND
15	C	RL05-1300-1724	0.0334	ND
16	C	RL05-1301-1728	0.0568	ND
17	C	RL05-1302-1749	0.0427	ND
18	C	RL05-1319-1767	0.0335	ND
19	C	RL05-1320-1768	0.0449	ND
20	C	RL05-1317-1762	0.0356	ND

Maximum	Average	Comparison Value
0.0871	0.04351	0.05

Minimum	Standard Deviation	Modified Cleanup Criteria
0.018 (ND)	0.02	11

ND= Non-Identified Nuclide

Comparison < Criteria
Yes

Table 21

JN-2 Sanitation Line Trench Overburden "B" Comparison Value

Area/Volume ID	Number of Data Points	t95% (n-1) Value from Table B-1 of NUREG/CR-5849
JN-2 Sanitation Line	20	1.729

Overburden "B"

Number	Section	Sample Number	Cs-137 Result (pCi/g)	
1	B	RL05-1183-1598	0.0175	ND
2	B	RL05-1184-1599	0.0304	
3	B	RL05-1185-1600	0.0187	ND
4	B	RL05-1186-1601	0.0305	
5	B	RL05-1253-1658	0.0361	ND
6	B	RL05-1254-1659	0.0444	ND
7	B	RL05-1255-1672	0.0399	ND
8	B	RL05-1256-1673	0.0376	ND
9	B	RL05-1257-1674	0.0366	ND
10	B	RL05-1258-1675	0.0316	ND
11	C	RL05-1259-1682	0.0336	ND
12	C	RL05-1260-1692	0.0352	ND
13	C	RL05-1294-1730	0.0324	ND
14	C	RL05-1295-1731	0.0399	ND
15	C	RL05-1296-1732	0.0374	ND
16	C	RL05-1323-1771	0.0322	ND
17	C	RL05-1324-1772	0.0343	ND
18	C	RL05-1325-1773	0.0368	ND
19	C	RL05-1326-1785	0.0286	ND
20	C	RL05-1327-1786	0.0294	ND

Maximum	Average	Comparison Value
0.0305	0.033155	0.04
Minimum	**Standard Deviation**	**Modified Cleanup Criteria**
0.0175 (ND)	0.01	11

ND= Non-Identified Nuclide

Comparison < Criteria
Yes

Table 22
Post-Restoration Exposure Rate Survey of Section B and C

Location	Collection Date	Exposure Rate µR/hr
Grid 1-140 NW	2/8/2006	7
Grid 1-140 NE	2/8/2006	8
Grid 1-140 SW	2/8/2006	8
Grid 1-140 SE	2/8/2006	8
Grid 1-155 NW	2/8/2006	8
Grid 1-155 NE	2/8/2006	8
Grid 1-155 SW	2/8/2006	8
Grid 1-155 SE	2/8/2006	8
Grid 1-156 NW	2/8/2006	8
Grid 1-156 NE	2/8/2006	8
Grid 1-156 SW	2/8/2006	8
Grid 1-156 SE	2/8/2006	8
Grid 2-017	2/8/2006	4
Grid 2-026	2/8/2006	4
Grid 2-034	2/8/2006	3
Grid 1-125	2/8/2006	4