
ISRA 009, Area II
ELV-1C (Non Hazardous, Radionuclides < LUT)
Soil Sampling for Radionuclides
and Waste Certification

Introduction

This data package provides the laboratory results of the nineteen samples taken at the ELV-1C (Non Hazardous) site in Area II. Soil sample locations and the demarcated area (designated by the green shaded area) are shown in Appendix 1. Soil sample results were compared to the draft provisional DTSC look-up table (LUT) values in order to determine if soil exceeds background as required for the NASA/DTSC Administrative Order on Consent (AOC)¹.

Methodology

These samples are a subset of the total samples taken in ELV-1C and apply to the non hazardous waste with radionuclides less than the LUTs. Sample taken in 2009 and 2012 for waste disposal characterization were analyzed for strontium-90, tritium and gamma emitting radionuclides by gamma spectroscopy, using an off-site laboratory². Minimum detectable concentrations (MDC) for cesium-137 and strontium-90 were 0.041 pCi/g and 0.042 pCi/g respectively. The gamma spectroscopy library also included the following contaminants-of-concern: Na-22, K-40, Mn-54, Co-60, Cs-134, Eu-152, Eu-154, Th-228, Th-232, U-235, U-238 and Am-241.

NASA and DTSC have signed an AOC that requires soils on Area II and portions of Area I to be cleaned up to background³. The USEPA has characterized local radionuclide background⁴ in soil and has published preliminary radiological trigger levels (RTL) based on the higher of background threshold values (BTV) or minimum detectable concentrations (MDC)⁵.

On August 23, 2012, DTSC sent NASA a letter regarding excavation of ISRA soil⁶. In the letter, DTSC stated,

“DTSC agrees with using the December 2011 USEPA RTLs for all radionuclides as the values for disposal of the ISRA soils. DTSC has concluded that use of the RTLs will not be inconsistent with SSFL radiological Lookup Table values.”

¹ “Administrative Order on Consent for Remedial Action (AOC)”, December 6, 2010, signed by the National Aeronautics and Space Administration (NASA) and the Department of Toxic Substances Control (DTSC).

² Boeing, “ISRA Soil Management Plan”, Attachment A, “ISRA Sampling for Radionuclides”, July 2009.

³ Page 5, Section 2.1 of the AOC states, “The cleanup of soils at the Site [Area II and portions of Area I] shall result in the end state of the Site after cleanup to be consistent with “background.” That is, at the completion of the cleanup, no contaminants shall remain in the soil above local background levels, with the exception of the exercise of the exemptions that are specifically expressed in the AIP. All response actions taken pursuant to this Order shall be performed so as to accomplish this objective, in full compliance with the terms and conditions detailed in the AIP, and in accordance with workplans that have been submitted to and approved by DTSC. Similarly, to the extent any radiological materials are determined to be present at this portion of the Site, the cleanup of soils at the Site contaminated with radiological materials shall result in no radiological contaminants remaining in the soil above local background levels, with the exception of the exercise of the same exemptions expressed in the AIP.”

⁴ USEPA, “Final Radiological Background Study Report, Santa Susana Field Laboratory, Ventura County, California”, October 2011.

⁵ USEPA, “Technical Memorandum, Radiological Trigger Levels, Santa Susana Field Laboratory Site, Area IV Radiological Study”, December 12, 2011.

⁶ DTSC, “Management and Disposal of Radionuclide-impacted Soil Excavated for Interim Source Removal Actions on NASA Property, Santa Susana Field Laboratory, Ventura County, California”, August 23, 2012

"ISRA radiological soil sample results that exceed the RTLs and that have not been re-sampled may be re-sampled to evaluate the initial RTL exceedance. Soil at locations characterized by initial and re-sample radiological results exceeding their respective RTLs will be removed and disposed of at a LLRW disposal facility, per Section 2.10 of the AOC."

"Validated radiological sample concentrations below the sample MDC can be treated as "non-detects" and the associated soil is not subject to the Section 2.10, AOC soil disposal conditions."

USEPA issued revised RTLs⁷ in December 2012 which were, in general, higher than the original RTLs. USEPA also issued laboratory specific radiological reference concentrations (RRC) in December 2012⁸. Subsequently, DTSC issued draft provisional LUTs⁹ for 16 radionuclides in January 2013, which in general matched the revised RTLs for those radionuclides whose RTLs were derived from BTVs¹⁰ (for example cesium-137 and uranium-238). The draft provisional LUTs subset also matched exactly the lower of the two lab-specific RRCs. Consistent with DTSC's intent in issuing draft provisional LUTs for interim remedial action implementation, ELV-1C data is compared to draft provisional LUTs and sample MDCs to determine compliance with the DTSC/NASA AOC.

Results

Appendix 2 shows the soil radionuclide data for the samples taken at the ELV-1C non hazardous area compared to the draft provisional LUTs and sample MDCs. All concentrations are below the draft provisional LUTs and/or less than the sample MDC and therefore comply with the NASA/DTSC AOC and are classified as not contaminated above background.

Conclusions

Excavated soil from the ELV-1C (non hazardous area) area is released for disposal with no radiological restrictions.



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⁷ USEPA, "Attachment A – Original and Corrected Radiological Trigger Levels - Development and Use of Radiological Reference Concentrations", Appendix K of "Final Radiological Characterization of Soils - Area IV and Northern Buffer Zone", December 21, 2012.

⁸ USEPA, "Attachment B - Radiological Reference Concentrations - Development and Use of Radiological Reference Concentrations", Appendix K of "Final Radiological Characterization of Soils - Area IV and Northern Buffer Zone", December 21, 2012.
















⁹ DTSC, "Development of the Draft Provisional Radiological Look-Up Table", DTSC Public Meeting, Chatsworth, California, January 30, 2013.

¹⁰ A notable exception was strontium-90 with a BTV of 0.075 pCi/g, an original RTL of 0.485 pCi/g, a revised RTL of 0.645 pCi/g, lab specific RRCs of 1.07 and 0.117 pCi/g and a draft provisional LUT of 0.117 pCi/g.

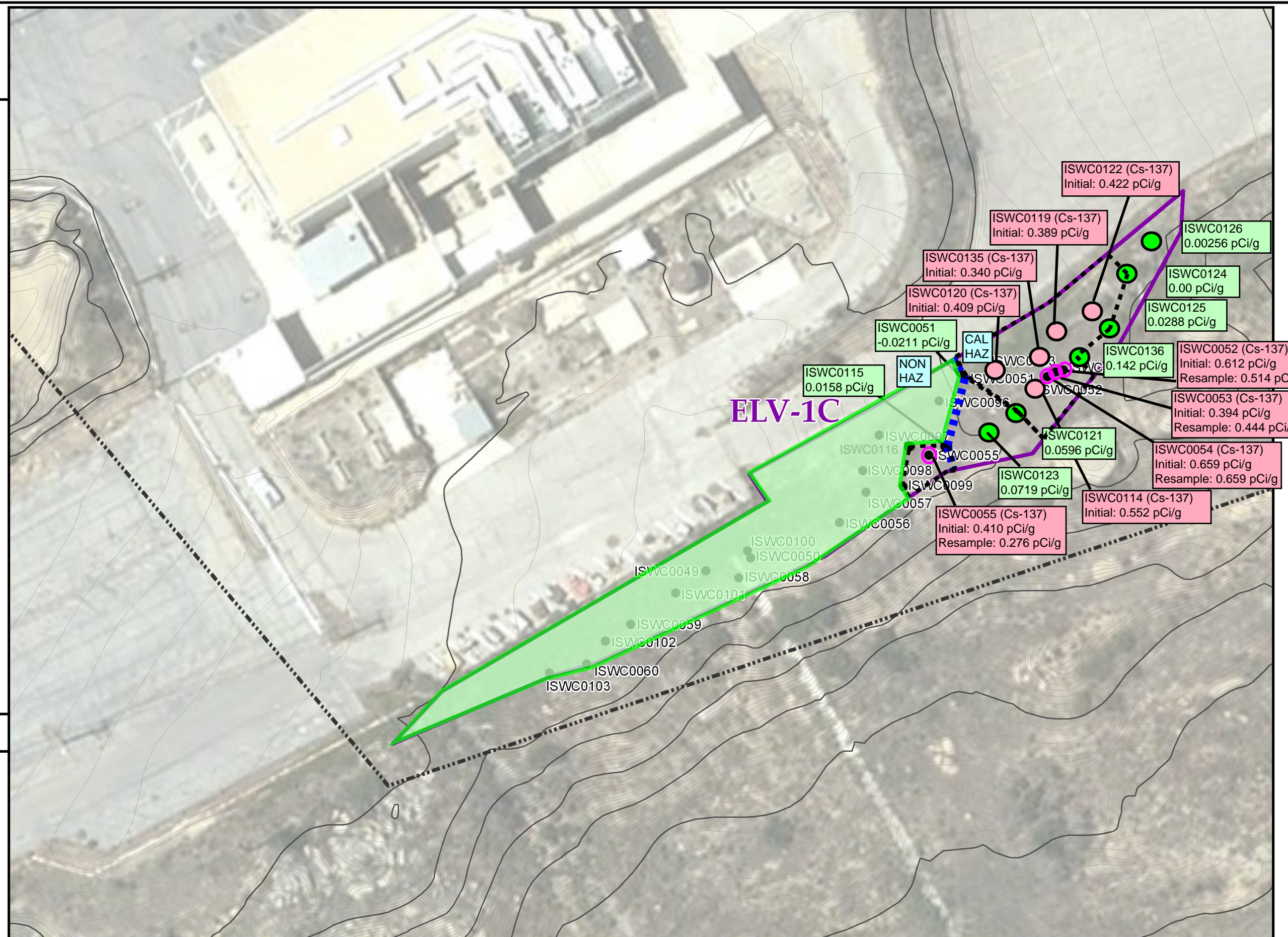
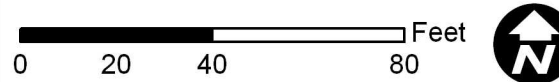
Appendix 1
ELV-1C Sampling Locations

Outfall 009 ELV-1C Waste Characterization Sample Location

Base Map Legend

-  Administrative Area Boundary
-  RFI Site Boundary
-  Excavation Area
-  Surface Water Drainage
-  Surface Water Divide
-  Outfall Water Divide
-  NPDES Outfall
-  Elevation Contour
-  Waste Characterization Sample Location
- January 2013 LUT Value**
Cs-137 = 0.225 pCi/g
-  Sample with confirmed result above LUT value.
-  Stepout sample; cs-137 result above LUT value; resampling not performed.
-  Stepout sample; cs-137 result below LUT value.
-  Non-Haz / Cal Haz (Pb) Boundary
-  Boundary of soils with results above LUT value
-  Boundary of non-hazardous soil to be disposed of without radiological restrictions.

DRAFT



S A N T A S U S A N A F I E L D L A B O R A T O R Y



Appendix 2

ELV-1C (Non Hazardous, Below LUT) Radionuclide Results

2009 - 2012 NASA ISRA Soil Data for ELV-1C (Non Haz, Radionuclides < LUT) (pCi/g)

Sampling Date	Sampling Location (General)	Sampling Location (Specific)	Sample Serial Number	Isotope	Activity	Error (+/-)	MDC	DTSC LUT	LUT Source	Activity > LUT ?	Activity > MDC ?	Detected Activity	Detected Activity > LUT ?	Non-detect Activity	Non-detect Activity > LUT ?	MDC > LUT ?	Ratio of MDC to LUT	Units	Comments	Document	Excavation Status
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Americium-241	0.0491	0.0401	0.0686	0.0386	MDC	YES	-	-	-	0.0491	YES	YES	1.78	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Americium-241	0.0543	0.129	0.215	0.0386	MDC	YES	-	-	-	0.0543	YES	YES	5.57	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Americium-241	0.064	0.0722	0.124	0.0386	MDC	YES	-	-	-	0.064	YES	YES	3.21	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Americium-241	0.0974	0.123	0.209	0.0386	MDC	YES	-	-	-	0.0974	YES	YES	5.41	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Americium-241	-0.0334	0.102	0.186	0.0386	MDC	-	-	-	-	-0.0334	-	YES	4.82	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Americium-241	0.017	0.0907	0.154	0.0386	MDC	-	-	-	-	0.017	-	YES	3.99	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Americium-241	0	0.0319	0.0541	0.0386	MDC	-	-	-	-	0	-	YES	1.40	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Americium-241	0.0519	0.0383	0.0681	0.0386	MDC	YES	-	-	-	0.0519	YES	YES	1.76	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Americium-241	0.115	0.111	0.197	0.0386	MDC	YES	-	-	-	0.115	YES	YES	5.10	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Americium-241	-0.0101	0.147	0.247	0.0386	MDC	-	-	-	-	-0.0101	-	YES	6.40	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Americium-241	-0.0151	0.0858	0.147	0.0386	MDC	-	-	-	-	-0.0151	-	YES	3.81	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Americium-241	0.0254	0.0748	0.125	0.0386	MDC	-	-	-	-	0.0254	-	YES	3.24	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Americium-241	0.0372	0.163	0.308	0.0386	MDC	-	-	-	-	0.0372	-	YES	7.98	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Americium-241	0.0935	0.123	0.209	0.0386	MDC	YES	-	-	-	0.0935	YES	YES	5.41	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Americium-241	0.0369	0.0658	0.111	0.0386	MDC	-	-	-	-	0.0369	-	YES	2.88	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Americium-241	0.0255	0.0421	0.0704	0.0386	MDC	-	-	-	-	0.0255	-	YES	1.82	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Cesium-134	0	0.0406	0.0635	0.0431	MDC	-	-	-	-	0	-	YES	1.47	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Cesium-134	0	0.0417	0.061	0.0431	MDC	-	-	-	-	0	-	YES	1.42	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Cesium-134	0	0.0339	0.0483	0.0431	MDC	-	-	-	-	0	-	YES	1.12	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Cesium-134	0	0.0303	0.0411	0.0431	MDC	-	-	-	-	0	-	-	0.95	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Cesium-134	0.0382	0.0381	0.0521	0.0431	MDC	-	-	-	-	0.0382	-	YES	1.21	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Cesium-134	0	0.0388	0.0564	0.0431	MDC	-	-	-	-	0	-	YES	1.31	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Cesium-134	0	0.034	0.0502	0.0431	MDC	-	-	-	-	0	-	YES	1.16	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Cesium-134	0	0.0443	0.069	0.0431	MDC	-	-	-	-	0	-	YES	1.60	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Cesium-134	0	0.0427	0.061	0.0431	MDC	-	-	-	-	0	-	YES	1.42	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Cesium-134	0	0.0308	0.0489	0.0431	MDC	-	-	-	-	0	-	YES	1.13	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Cesium-134	0	0.0369	0.0561	0.0431	MDC	-	-	-	-	0	-	YES	1.30	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Cesium-134	0	0.0385	0.0513	0.0431	MDC	-	-	-	-	0	-	YES	1.19	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Cesium-134	0	0.0521	0.0611	0.0431	MDC	-	-	-	-	0	-	YES	1.42	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Cesium-134	0	0.0366	0.0591	0.0431	MDC	-	-	-	-	0	-	YES	1.37	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Cesium-134	0	0.041	0.0566	0.0431	MDC	-	-	-	-	0	-	YES	1.31	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Cesium-134	0	0.0345	0.0557	0.0431	MDC	-	-	-	-	0	-	YES	1.29	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Cesium-137	0.14	0.0427	0.0452	0.225	BTV	-	YES	0.14	-	-	-	-	0.20	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Cesium-137	0.0207	0.0297	0.05	0.225	BTV	-	-	-	-	0.0207	-	-	0.22	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Cesium-137	0.0101	0.0206	0.0362	0.225	BTV	-	-	-	-	0.0101	-	-	0.16	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Cesium-137	0.0195	0.023	0.0288	0.225	BTV	-	-	-	-	0.0195	-	-	0.13	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Cesium-137	0.196	0.0475	0.0353	0.225	BTV	-	YES	0.196	-	-	-	-	0.16	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Cesium-137	0.315	0.0499	0.0393	0.225	BTV	YES	YES	0.315	YES	-	-	-	0.17	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Cesium-137	0.0609	0.0252	0.0358	0.225	BTV	-	YES	0.0609	-	-	-	-	0.16	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Cesium-137	0.09	0.0436	0.0497	0.225	BTV	-	YES	0.09	-	-	-	-	0.22	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Cesium-137	0.135	0.0405	0.0415	0.225	BTV	-	YES	0.135	-	-	-	-	0.18	pCi/g	Non-Haz Area	235959	Complete
9/28/2012	ELV-1C	ISWC0097	ISWC0097BS001	Cesium-137	0.0145	0.0268	0.0483	0.225	BTV	-	-	-	-	0.0145	-	-	0.21	pCi/g	Non-Haz Area; resample	312152	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Cesium-137	0.221	0.0373	0.0339	0.225	BTV	-	YES	0.221	-	-	-	-	0.15	pCi/g	Non-Haz Area; resampled	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Cesium-137	0.0242	0.0273	0.0347	0.225	BTV	-	-	-	-	0.0242	-	-	0.15	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Cesium-137	-0.00336	0.0214	0.0365	0.225	BTV	-	-	-	-	-0.00336	-	-	0.16	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Cesium-137	0.0108	0.0267	0.0463	0.225	BTV	-	-	-	-	0.0108	-	-	0.21	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Cesium-137	0.1	0.0403	0.041	0.225	BTV	-	YES	0.1	-	-	-	-	0.18	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Cesium-137	0.196	0.0415	0.0418	0.225	BTV	-	YES	0.196	-	-	-	-	0.19	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Cesium-137	0.128	0.0381	0.0448	0.225	BTV	-	YES	0.128	-	-	-	-	0.20	pCi/g	Non-Haz Area	235959	Complete
9/28/2012	ELV-1C	ISWC0115	ISWC0115S001	Cesium-137	0.0158	0.0225	0.0419	0.225	BTV	-	-	-	-	0.0158	-	-	0.19	pCi/g	Non-Haz Area	312152	Complete
9/28/2012	ELV-1C	ISWC0116	ISWC0116S001	Cesium-137	0.0104	0.0268	0.0487	0.225	BTV	-	-	-	-	0.0104	-	-	0.22	pCi/g	Non-Haz Area	312152	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Cobalt-60	-0.0115	0.0266	0.0426	0.0363	MDC	-	-	-	-	-0.0115	-	YES	1.17	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Cobalt-60	0.011	0.0269	0.0468	0.0363	MDC	-	-	-	-	0.011	-	YES	1.29	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Cobalt-60	-0.000478	0.0187	0.0314	0.0363	MDC	-	-	-	-	-0.000478	-	-	0.87	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Cobalt-60	-0.0049	0.0176	0.0291	0.0363	MDC	-	-	-	-	-0.0049	-	-	0.80	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Cobalt-60	-0.00467	0.0227	0.0385	0.0363	MDC	-	-	-	-	-0.00467	-	YES	1.06	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Cobalt-60	0.0241	0.0212	0.0394	0.0363	MDC	-	-	-	-	0.0241	-	YES	1.09	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Cobalt-60	0.0168	0.0205	0.0362	0.0363	MDC	-	-	-	-	0.0168	-	-	1.00	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Cobalt-60	0.00357	0.0294	0.0508	0.0363	MDC	-	-	-	-	0.00357	-	YES	1.40	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Cobalt-60	0.0101	0.0259	0.0452	0.0363	MDC	-	-	-	-	0.0101	-	YES	1.25	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Cobalt-60	-1.24E-05	0.0234	0.0401	0.0363	MDC	-	-	-	-	-0.0000124	-	YES	1.10	pCi/g	Non-Haz Area	235959	Complete
8/24/																					

2009 - 2012 NASA ISRA Soil Data for ELV-1C (Non Haz, Radionuclides < LUT) (pCi/g)

Sampling Date	Sampling Location (General)	Sampling Location (Specific)	Sample Serial Number	Isotope	Activity	Error (+/-)	MDC	DTSC LUT	LUT Source	Activity > LUT ?	Activity > MDC ?	Detected Activity	Detected Activity > LUT ?	Non-detect Activity	Non-detect Activity > LUT ?	MDC > LUT ?	Ratio of MDC to LUT	Units	Comments	Document	Excavation Status
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Europium-152	0.00499	0.0766	0.0806	0.0739	MDC	-	-	-	-	0.00499	-	YES	1.09	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Europium-152	-0.0298	0.0595	0.0945	0.0739	MDC	-	-	-	-	-0.0298	-	YES	1.28	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Europium-152	-0.0468	0.0571	0.0882	0.0739	MDC	-	-	-	-	-0.0468	-	YES	1.19	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Europium-152	0.028	0.0507	0.0809	0.0739	MDC	-	-	-	-	0.028	-	YES	1.09	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Europium-152	-0.0428	0.0932	0.116	0.0739	MDC	-	-	-	-	-0.0428	-	YES	1.57	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Europium-152	-0.0635	0.059	0.0991	0.0739	MDC	-	-	-	-	-0.0635	-	YES	1.34	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Europium-152	-0.0128	0.0656	0.0938	0.0739	MDC	-	-	-	-	-0.0128	-	YES	1.27	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Europium-152	-0.0308	0.0559	0.0841	0.0739	MDC	-	-	-	-	-0.0308	-	YES	1.14	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Europium-152	-0.0136	0.0728	0.0887	0.0739	MDC	-	-	-	-	-0.0136	-	YES	1.20	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Europium-152	-0.00806	0.0803	0.116	0.0739	MDC	-	-	-	-	-0.00806	-	YES	1.57	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Europium-152	-0.0291	0.0698	0.112	0.0739	MDC	-	-	-	-	-0.0291	-	YES	1.52	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Europium-152	-0.0468	0.058	0.0942	0.0739	MDC	-	-	-	-	-0.0468	-	YES	1.27	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Europium-152	-0.039	0.0889	0.104	0.0739	MDC	-	-	-	-	-0.039	-	YES	1.41	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Europium-154	-0.0455	0.0852	0.137	0.198	MDC	-	-	-	-	-0.0455	-	-	0.69	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Europium-154	-0.0236	0.0867	0.143	0.198	MDC	-	-	-	-	-0.0236	-	-	0.72	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Europium-154	-0.0185	0.0632	0.105	0.198	MDC	-	-	-	-	-0.0185	-	-	0.53	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Europium-154	-0.0092	0.0628	0.0952	0.198	MDC	-	-	-	-	-0.0092	-	-	0.48	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Europium-154	0.0256	0.0744	0.131	0.198	MDC	-	-	-	-	0.0256	-	-	0.66	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Europium-154	-0.101	0.077	0.117	0.198	MDC	-	-	-	-	-0.101	-	-	0.59	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Europium-154	0.00962	0.0642	0.109	0.198	MDC	-	-	-	-	0.00962	-	-	0.55	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Europium-154	-0.0154	0.092	0.157	0.198	MDC	-	-	-	-	-0.0154	-	-	0.79	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Europium-154	0.000929	0.082	0.14	0.198	MDC	-	-	-	-	0.000929	-	-	0.71	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Europium-154	-0.0103	0.0681	0.116	0.198	MDC	-	-	-	-	-0.0103	-	-	0.59	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Europium-154	-0.00664	0.0701	0.119	0.198	MDC	-	-	-	-	-0.00664	-	-	0.60	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Europium-154	0.0109	0.0763	0.113	0.198	MDC	-	-	-	-	0.0109	-	-	0.57	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Europium-154	0.0287	0.076	0.131	0.198	MDC	-	-	-	-	0.0287	-	-	0.66	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Europium-154	-0.0424	0.0759	0.122	0.198	MDC	-	-	-	-	-0.0424	-	-	0.62	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Europium-154	0.0132	0.0707	0.123	0.198	MDC	-	-	-	-	0.0132	-	-	0.62	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Europium-154	-0.000852	0.0848	0.142	0.198	MDC	-	-	-	-	-0.000852	-	-	0.72	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Manganese-54	0.00167	0.0244	0.0427	-	-	-	-	-	-	0.00167	-	-	-	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Manganese-54	0.023	0.0249	0.0456	-	-	-	-	-	-	0.023	-	-	-	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Manganese-54	0.00913	0.0199	0.0358	-	-	-	-	-	-	0.00913	-	-	-	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Manganese-54	0.00767	0.0163	0.0291	-	-	-	-	-	-	0.00767	-	-	-	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Manganese-54	0.0195	0.0217	0.0392	-	-	-	-	-	-	0.0195	-	-	-	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Manganese-54	0.0074	0.0219	0.038	-	-	-	-	-	-	0.0074	-	-	-	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Manganese-54	-0.00178	0.0202	0.0353	-	-	-	-	-	-	-0.00178	-	-	-	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Manganese-54	0.0121	0.0267	0.0477	-	-	-	-	-	-	0.0121	-	-	-	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Manganese-54	-0.0205	0.0239	0.0385	-	-	-	-	-	-	-0.0205	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Manganese-54	0.00524	0.0232	0.0353	-	-	-	-	-	-	0.00524	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Manganese-54	-0.00451	0.0213	0.036	-	-	-	-	-	-	-0.00451	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Manganese-54	0.00126	0.0206	0.0366	-	-	-	-	-	-	0.00126	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Manganese-54	0.00802	0.0222	0.0396	-	-	-	-	-	-	0.00802	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Manganese-54	0.000508	0.0236	0.0414	-	-	-	-	-	-	0.000508	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Manganese-54	0.0125	0.0231	0.0391	-	-	-	-	-	-	0.0125	-	-	-	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Manganese-54	0.0031	0.026	0.0454	-	-	-	-	-	-	0.0031	-	-	-	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Potassium-40	22.4	1.74	0.355	35.5	BTV	-	YES	22.4	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Potassium-40	22.6	1.85	0.37	35.5	BTV	-	YES	22.6	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Potassium-40	21.8	1.69	0.271	35.5	BTV	-	YES	21.8	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Potassium-40	23.7	1.92	0.237	35.5	BTV	-	YES	23.7	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Potassium-40	23	2.18	0.298	35.5	BTV	-	YES	23	-	-	-	-	0.01	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Potassium-40	24.3	2	0.288	35.5	BTV	-	YES	24.3	-	-	-	-	0.01	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Potassium-40	21.9	1.56	0.27	35.5	BTV	-	YES	21.9	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Potassium-40	22	1.7	0.335	35.5	BTV	-	YES	22	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Potassium-40	23.5	2.05	0.323	35.5	BTV	-	YES	23.5	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Potassium-40	23.3	2.22	0.304	35.5	BTV	-	YES	23.3	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Potassium-40	22.2	1.83	0.267	35.5	BTV	-	YES	22.2	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Potassium-40	23.9	1.97	0.31	35.5	BTV	-	YES	23.9	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Potassium-40	22.8	2.03	0.317	35.5	BTV	-	YES	22.8	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Potassium-40	22.8	1.83	0.308	35.5	BTV	-	YES	22.8	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Potassium-40	23.7	2.23	0.284	35.5	BTV	-	YES	23.7	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Potassium-40	23.9	1.85	0.312	35.5	BTV	-	YES	23.9	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Sodium-22	-0.0117	0.0299	0.0486	0.0468	MDC	-	-	-	-	-0.0117	-	YES	1.04	pCi/g			

2009 - 2012 NASA ISRA Soil Data for ELV-1C (Non Haz, Radionuclides < LUT) (pCi/g)

Sampling Date	Sampling Location (General)	Sampling Location (Specific)	Sample Serial Number	Isotope	Activity	Error (+/-)	MDC	DTSC LUT	LUT Source	Activity > LUT ?	Activity > MDC ?	Detected Activity	Detected Activity > LUT ?	Non-detect Activity	Non-detect Activity > LUT ?	MDC > LUT ?	Ratio of MDC to LUT	Units	Comments	Document	Excavation Status
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Sodium-22	-0.00406	0.0243	0.0415	0.0468	MDC	-	-	-	-	-0.00406	-	-	0.89	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Sodium-22	-0.0022	0.025	0.0423	0.0468	MDC	-	-	-	-	-0.0022	-	-	0.90	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Sodium-22	0.00403	0.0271	0.0403	0.0468	MDC	-	-	-	-	0.00403	-	-	0.86	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Sodium-22	0.01	0.027	0.0467	0.0468	MDC	-	-	-	-	0.01	-	-	1.00	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Sodium-22	-0.0151	0.027	0.0434	0.0468	MDC	-	-	-	-	-0.0151	-	-	0.93	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Sodium-22	0.00277	0.0253	0.0436	0.0468	MDC	-	-	-	-	0.00277	-	-	0.93	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Sodium-22	0.00126	0.0301	0.0504	0.0468	MDC	-	-	-	-	0.00126	-	YES	1.08	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Strontium-90	0.00961	0.0232	0.0428	0.117	MDC	-	-	-	-	0.00961	-	-	0.37	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Strontium-90	0.0275	0.0274	0.0443	0.117	MDC	-	-	-	-	0.0275	-	-	0.38	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Strontium-90	0.0369	0.0308	0.0499	0.117	MDC	-	-	-	-	0.0369	-	-	0.43	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Strontium-90	0.0268	0.0194	0.0319	0.117	MDC	-	-	-	-	0.0268	-	-	0.27	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Strontium-90	0.0142	0.0259	0.0447	0.117	MDC	-	-	-	-	0.0142	-	-	0.38	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Strontium-90	0.027	0.019	0.0311	0.117	MDC	-	-	-	-	0.027	-	-	0.27	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Strontium-90	0.017	0.0262	0.0456	0.117	MDC	-	-	-	-	0.017	-	-	0.39	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Strontium-90	0.0192	0.0213	0.0356	0.117	MDC	-	-	-	-	0.0192	-	-	0.30	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Strontium-90	0.012	0.0182	0.0318	0.117	MDC	-	-	-	-	0.012	-	-	0.27	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Strontium-90	-0.0147	0.0197	0.047	0.117	MDC	-	-	-	-	-0.0147	-	-	0.40	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Strontium-90	0.0268	0.0297	0.0494	0.117	MDC	-	-	-	-	0.0268	-	-	0.42	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Strontium-90	-0.000186	0.0228	0.0454	0.117	MDC	-	-	-	-	-0.000186	-	-	0.39	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Strontium-90	0.0377	0.0273	0.0434	0.117	MDC	-	-	-	-	0.0377	-	-	0.37	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Strontium-90	0.0216	0.0223	0.0366	0.117	MDC	-	-	-	-	0.0216	-	-	0.31	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Strontium-90	0.00657	0.0234	0.0431	0.117	MDC	-	-	-	-	0.00657	-	-	0.37	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Thorium-228	1.44	0.167	0.0563	4.27	BTV	-	YES	1.44	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Thorium-228	1.37	0.122	0.0687	4.27	BTV	-	YES	1.37	-	-	-	-	0.02	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Thorium-228	1.25	0.115	0.0528	4.27	BTV	-	YES	1.25	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Thorium-228	1.37	0.123	0.0464	4.27	BTV	-	YES	1.37	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Thorium-228	1.29	0.113	0.0566	4.27	BTV	-	YES	1.29	-	-	-	-	0.01	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Thorium-228	1.22	0.105	0.0537	4.27	BTV	-	YES	1.22	-	-	-	-	0.01	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Thorium-228	1.27	0.12	0.044	4.27	BTV	-	YES	1.27	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Thorium-228	1.37	0.14	0.0605	4.27	BTV	-	YES	1.37	-	-	-	-	0.01	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Thorium-228	1.32	0.141	0.0596	4.27	BTV	-	YES	1.32	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Thorium-228	1.29	0.114	0.0512	4.27	BTV	-	YES	1.29	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Thorium-228	1.33	0.112	0.0498	4.27	BTV	-	YES	1.33	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Thorium-228	1.26	0.107	0.0522	4.27	BTV	-	YES	1.26	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Thorium-228	1.28	0.128	0.0669	4.27	BTV	-	YES	1.28	-	-	-	-	0.02	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Thorium-228	1.35	0.12	0.0616	4.27	BTV	-	YES	1.35	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Thorium-228	1.44	0.151	0.0554	4.27	BTV	-	YES	1.44	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Thorium-228	1.35	0.16	0.0623	4.27	BTV	-	YES	1.35	-	-	-	-	0.01	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Thorium-232	1.31	0.252	0.15	3.44	BTV	-	YES	1.31	-	-	-	-	0.04	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Thorium-232	1.29	0.237	0.155	3.44	BTV	-	YES	1.29	-	-	-	-	0.05	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Thorium-232	1.37	0.214	0.121	3.44	BTV	-	YES	1.37	-	-	-	-	0.04	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Thorium-232	1.36	0.192	0.102	3.44	BTV	-	YES	1.36	-	-	-	-	0.03	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Thorium-232	1.18	0.218	0.129	3.44	BTV	-	YES	1.18	-	-	-	-	0.04	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Thorium-232	1.32	0.232	0.132	3.44	BTV	-	YES	1.32	-	-	-	-	0.04	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Thorium-232	1.38	0.204	0.122	3.44	BTV	-	YES	1.38	-	-	-	-	0.04	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Thorium-232	1.63	0.26	0.173	3.44	BTV	-	YES	1.63	-	-	-	-	0.05	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Thorium-232	1.4	0.24	0.132	3.44	BTV	-	YES	1.4	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Thorium-232	1.29	0.239	0.118	3.44	BTV	-	YES	1.29	-	-	-	-	0.03	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Thorium-232	1.11	0.223	0.127	3.44	BTV	-	YES	1.11	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Thorium-232	1.28	0.23	0.123	3.44	BTV	-	YES	1.28	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Thorium-232	1.34	0.234	0.151	3.44	BTV	-	YES	1.34	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Thorium-232	1.37	0.222	0.142	3.44	BTV	-	YES	1.37	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Thorium-232	1.39	0.23	0.136	3.44	BTV	-	YES	1.39	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Thorium-232	1.31	0.261	0.153	3.44	BTV	-	YES	1.31	-	-	-	-	0.04	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Tritium	-0.0861	0.362	0.672	8.59	MDC	-	-	-	-	-0.0861	-	-	0.08	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Tritium	-0.126	0.383	0.715	8.59	MDC	-	-	-	-	-0.126	-	-	0.08	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Tritium	-0.269	0.367	0.712	8.59	MDC	-	-	-	-	-0.269	-	-	0.08	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Tritium	-0.208	0.353	0.677	8.59	MDC	-	-	-	-	-0.208	-	-	0.08	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Tritium	0.0371	0.408	0.735	8.59	MDC	-	-	-	-	0.0371	-	-	0.09	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Tritium	0.0186	0.401	0.726	8.59	MDC	-	-	-	-	0.0186	-	-	0.08	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Tritium	-0.0543	0.39	0.717	8.59	MDC	-	-	-	-	-0.0543	-	-	0.08	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Tritium	0.468	0.534	0.898	8.59	MDC	-	-	-	-								

2009 - 2012 NASA ISRA Soil Data for ELV-1C (Non Haz, Radionuclides < LUT) (pCi/g)

Sampling Date	Sampling Location (General)	Sampling Location (Specific)	Sample Serial Number	Isotope	Activity	Error (+/-)	MDC	DTSC LUT	LUT Source	Activity > LUT ?	Activity > MDC ?	Detected Activity	Detected Activity > LUT ?	Non-detect Activity	Non-detect Activity > LUT ?	MDC > LUT ?	Ratio of MDC to LUT	Units	Comments	Document	Excavation Status
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Uranium-235	-0.0138	0.151	0.257	0.152	BTV	-	-	-	-	-0.0138	-	YES	1.69	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Uranium-235	0.121	0.118	0.209	0.152	BTV	-	-	-	-	0.121	-	YES	1.38	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Uranium-235	0.116	0.127	0.178	0.152	BTV	-	-	-	-	0.116	-	YES	1.17	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Uranium-235	-0.0183	0.131	0.219	0.152	BTV	-	-	-	-	-0.0183	-	YES	1.44	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Uranium-235	0.136	0.125	0.215	0.152	BTV	-	-	-	-	0.136	-	YES	1.41	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Uranium-235	0.0113	0.101	0.174	0.152	BTV	-	-	-	-	0.0113	-	YES	1.14	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Uranium-235	0.0412	0.168	0.233	0.152	BTV	-	-	-	-	0.0412	-	YES	1.53	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Uranium-235	0.0308	0.16	0.22	0.152	BTV	-	-	-	-	0.0308	-	YES	1.45	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Uranium-235	0.091	0.118	0.208	0.152	BTV	-	-	-	-	0.091	-	YES	1.37	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Uranium-235	0.0688	0.141	0.196	0.152	BTV	-	-	-	-	0.0688	-	YES	1.29	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Uranium-235	-0.0363	0.121	0.211	0.152	BTV	-	-	-	-	-0.0363	-	YES	1.39	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Uranium-235	0.211	0.161	0.257	0.152	BTV	YES	-	-	-	0.211	YES	YES	1.69	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Uranium-235	0.0451	0.147	0.255	0.152	BTV	-	-	-	-	0.0451	-	YES	1.68	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Uranium-235	0.0452	0.124	0.209	0.152	BTV	-	-	-	-	0.0452	-	YES	1.38	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Uranium-235	0.0557	0.139	0.24	0.152	BTV	-	-	-	-	0.0557	-	YES	1.58	pCi/g	Non-Haz Area	235959	Complete
7/28/2009	ELV-1C	ISWC0049	ISWC0049RadS001	Uranium-238	0.79	0.513	0.666	1.96	BTV	-	YES	0.79	-	-	-	-	0.34	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0050	ISWC0050RadS001	Uranium-238	0.75	1.12	1.67	1.96	BTV	-	-	-	-	0.75	-	-	0.85	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0056	ISWC0056RadS001	Uranium-238	1.36	0.879	1.08	1.96	BTV	-	YES	1.36	-	-	-	-	0.55	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0057	ISWC0057RadS001	Uranium-238	1.35	1.23	1.51	1.96	BTV	-	-	-	-	1.35	-	-	0.77	pCi/g	Non-Haz Area	234235	Complete
8/28/2009	ELV-1C	ISWC0058	ISWC0058ARadS001	Uranium-238	0.411	0.869	1.57	1.96	BTV	-	-	-	-	0.411	-	-	0.80	pCi/g	Non-Haz Area; Re-sample	236227	Complete
7/28/2009	ELV-1C	ISWC0058	ISWC0058RadS001	Uranium-238	0.619	1.13	1.28	1.96	BTV	-	-	-	-	0.619	-	-	0.65	pCi/g	Non-Haz Area; Re-sampled	234235	Complete
7/28/2009	ELV-1C	ISWC0059	ISWC0059RadS001	Uranium-238	1.27	0.476	0.524	1.96	BTV	-	YES	1.27	-	-	-	-	0.27	pCi/g	Non-Haz Area	234235	Complete
7/28/2009	ELV-1C	ISWC0060	ISWC0060RadS001	Uranium-238	0.61	0.655	0.651	1.96	BTV	-	-	-	-	0.61	-	-	0.33	pCi/g	Non-Haz Area	234235	Complete
8/24/2009	ELV-1C	ISWC0096	ISWC0096RadS001	Uranium-238	0.664	1.39	1.54	1.96	BTV	-	-	-	-	0.664	-	-	0.79	pCi/g	Non-Haz Area	235959	Complete
9/28/2012	ELV-1C	ISWC0097	ISWC0097BS001	Uranium-238	0.402	0.203	0.135	1.96	BTV	-	YES	0.402	-	-	-	-	0.07	pCi/g	Non-Haz Area; resample	312152	Complete
8/24/2009	ELV-1C	ISWC0097	ISWC0097RadS001	Uranium-238	1.95	1.35	1.82	1.96	BTV	-	YES	1.95	-	-	-	-	0.93	pCi/g	Non-Haz Area; resampled	235959	Complete
8/24/2009	ELV-1C	ISWC0098	ISWC0098RadS001	Uranium-238	1.03	0.937	1.22	1.96	BTV	-	-	-	-	1.03	-	-	0.62	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0099	ISWC0099RadS001	Uranium-238	0.888	0.763	1.09	1.96	BTV	-	-	-	-	0.888	-	-	0.56	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0100	ISWC0100RadS001	Uranium-238	-0.837	1.29	2.32	1.96	BTV	-	-	-	-	-0.837	-	YES	1.18	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0101	ISWC0101RadS001	Uranium-238	0.531	1.2	1.66	1.96	BTV	-	-	-	-	0.531	-	-	0.85	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0102	ISWC0102RadS001	Uranium-238	1.08	0.78	0.942	1.96	BTV	-	YES	1.08	-	-	-	-	0.48	pCi/g	Non-Haz Area	235959	Complete
8/24/2009	ELV-1C	ISWC0103	ISWC0103RadS001	Uranium-238	0.671	0.561	0.682	1.96	BTV	-	-	-	-	0.671	-	-	0.35	pCi/g	Non-Haz Area	235959	Complete