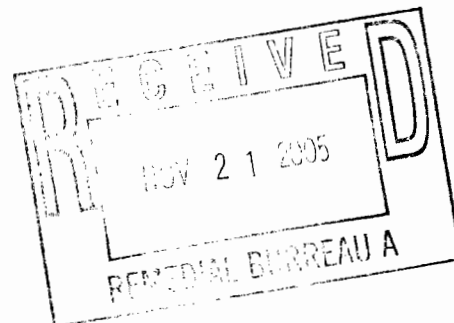


This Investigation Beneath the 140 Building (Survey Unit 06 and Survey Unit 07) Report has been reviewed by URS Corporation – New York, and I am in agreement with the conclusions.

URS Corporation – New York



Robert D. Brathovde, P.E.
Engineer of Record



This Investigation Beneath the 140 Building (Survey Unit 06 and Survey Unit 07) Report has been reviewed by Professional Radiation Consulting, Inc. (PRCI), and I am in agreement with the conclusions.

Professional Radiation Consulting, Inc.

A handwritten signature in cursive script, appearing to read "Shane Brightwell".

Shane Brightwell, CHP
President

This Investigation Beneath the 140 Building (Survey Unit 06 and Survey Unit 07) Report has been reviewed by Envirocon, Inc. and I am in agreement with the conclusions.

Envirocon, Inc.

A handwritten signature in cursive script, appearing to read "Richard Hafner".

Richard Hafner
Radiation Safety Officer

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Appendix B:	Correspondence regarding the Systematic Subsurface Soil Sampling and Analysis Plan, Beneath the 140 Building, November 2004
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Appendix D:	MARSSIM and <i>COMPASS Software</i> Evaluations

1.0 INTRODUCTION

This report provides the results, data assessments and conclusions made with respect to the characterization of surface and subsurface soils pursuant to the *Systematic Subsurface Soil Sampling and Analysis Plan, Beneath the 140 Building* (SSSA Plan), dated November 2004 (**Appendix A**) at the Former Sylvania Electric Products Incorporated (Sylvania) facility located at 140, 100 and 70 Cantiague Rock Road, Hicksville, New York (the Site). The New York State Department of Environmental Conservation (NYSDEC) provided comments on the SSSA Plan in a letter dated December 20, 2004. GTE Operations Support Incorporated (GTEOSI) responded to the NYSDEC comments in a letter dated January 20, 2005. The SSSA Plan was approved by NYSDEC in a letter dated January 31, 2005. These letters are included in **Appendix B**.

The areas investigated were designated as Survey Units (SUs) as defined in NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual* (the MARSSIM). The areas designated as SU06 and SU07 are located respectively under the eastern and western portions of the 140 Building (**Figure 1**). This investigation commenced on February 22, 2005 and sampling was completed on April 14, 2005.

Included in this report are sample analytical results, data assessments and conclusions regarding radiological, volatile organic compounds (VOCs) and nickel (Ni) data. Also reported herein are the analytical results for beryllium (Be).

2.0 SCREENING AND SAMPLING

A systematic triangular sampling pattern was used to provide uniform lateral coverage of the SUs. Soil borings were advanced and soil samples were collected continuously, beginning at ground surface (just below the bottom of the concrete slab) to 30 feet below ground surface (bgs). The sampling pattern grid, rows and boring locations are shown in **Figure 1**.

A 2-foot (ft) long split spoon sampling device was advanced for soil retrieval. The recovered soils were screened using a photoionization detector (PID) for VOCs and a 3-inch sodium iodide (NaI) detector for radioactivity prior to sample collection.

The samples designated as sample point (SP) samples were collected at intervals that were vertically staggered by 1 meter (m) (approximately 3 ft). SP samples were collected in 2-ft increments to maximize sample volume. This additional volume of soil was needed to perform both on-Site and off-Site analyses. Row 1 borings had SP samples at 1 ft, 11 ft and 21 ft; Row 2 borings had SP samples at 4 ft, 14 ft and 24 ft; and Row 3 borings had SP samples at 7 ft, 17 ft and 27 ft. In addition, each boring had an SP sample at 30 ft (**Figure 2**).

Samples designated as delineation (DL) samples were collected in 1-ft increments between the staggered SP sample intervals.

Samples were analyzed both on Site for timely response to guide investigation and off Site at Severn Trent Laboratories, Inc. (STL) of Earth City, Missouri for final verification. The sample analytical results were compared to the Site cleanup levels specified in the approved *Comprehensive Soil Remediation Program Work Plan, Former Sylvania Electric Products*

Facility, January 18, 2002 (Revision 5: June 2003) (Work Plan). Intervals, increments and analyses for each row type are summarized on **Figure 2**.

A field geologist classified the soils in general accordance with the Unified Soil Classification System (USCS). Sample descriptions included soil type, color, moisture, and visual observations. Boring Logs are provided in **Appendix C**.

2.1 RADIONUCLIDES

DL samples were homogenized and analyzed on Site by gamma spectroscopy for thorium (Th-232) and uranium (U-238).

SP samples were homogenized and split. One portion was analyzed on Site by gamma spectroscopy and the other portion was sent off Site to STL for alpha spectroscopy analysis. STL performed isotopic thorium analysis using National Academy of Science (NAS)/Department of Energy (DOE) 3004/RP-725 and isotopic uranium analysis using NAS/DOE 3050/RP-725 (which includes U-234).

2.2 VOLATILE ORGANIC COMPOUNDS

DL samples were collected and analyzed for VOCs if PID readings were greater than 25 parts per million (ppm) or if visual observations (e.g., staining) warranted. DL samples to be analyzed on Site by Stone Environmental Inc. (SEI) for trichloroethene (TCE) and tetrachloroethene (PCE) using solid phase microextraction and capillary gas chromatography. Based on field screening results as noted in the boring logs (**Appendix C**), no DL samples were identified for analysis on Site.

Two samples were collected at each SP interval for VOC analysis. One sample was analyzed on Site by SEI. The other sample was sent off Site to STL for VOC analysis using United States Environmental Protection Agency (USEPA) Method 8260B.

2.3 METALS

DL samples were collected for Ni analysis at alternating 1-ft intervals between SP samples. If sample recovery was insufficient, analysis could not be performed. In such an event, a sample for Ni was collected at the next available interval and at alternate intervals thereafter. Ni DL samples were analyzed on Site using x-ray fluorescence spectroscopy (XRF) by SEI.

Two samples were collected at each SP interval for metals analysis. One sample was analyzed on Site by SEI for Ni. The other sample was sent off Site to STL for analysis of Ni and Be using USEPA Method 6010B.

2.4 SAMPLING SUMMARY

The SSSA Plan was designed to allow flexibility to respond to field conditions (e.g., boring relocation and insufficient sample recovery). Nineteen soil borings had to be moved from their proposed locations due to limited access (e.g., utilities and obstructions). The relocations were

within the limits specified in the SSSA Plan. These obstructions, each designated as an "interference area" in **Figure 1**, consisted of areas inaccessible to large equipment. Each soil boring location was surveyed using the laser positioning system (LPS).

In SU06 a total of 15 soil borings were advanced resulting in the recovery of 60 SP samples, 312 radionuclide DL samples, and 173 Ni DL samples. In SU07 a total of 22 soil borings were advanced resulting in the recovery of 88 SP samples, 478 radionuclide DL samples, and 260 Ni DL samples.

3.0 ANALYTICAL RESULTS/ASSESSMENTS

The results of the DL and SP sample analyses from SU06 and SU07 are summarized in **Table 1**. The results of the SP sample analyses from SU06 and SU07 are summarized in **Table 2**. Statistical assessments of radiological off-Site SP data were performed with applicable methods specified in the MARSSIM and analytical results were also compared to Site cleanup levels. VOC and Ni results were compared to the Site cleanup levels. Be results were compared to the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 values and other published literature sources for New York State soils. These assessments are described herein.

3.1 RADIOLOGICAL

A statistical assessment of radiological SP data (with the exception of samples from the final depth) was performed using the MARSSIM methods. SP samples at the final depth (30 ft) were compared to the Site cleanup levels in the Work Plan (**Table 2**).

3.1.1 Survey Unit Assessment

Each SU was characterized vertically at 3-m (10-ft) staggered depths. Since the MARSSIM provides characterization and final verification guidance primarily on surface soils, each 3-m (10-ft) SU interval was evaluated independently as if that SU interval were representative of an undulating soil surface. For the purposes of the assessment, the 0- to 3-m (0- to 10-ft) SU interval was labeled SU Interval 1, the 3- to 6-m (11- to 20-ft) was SU Interval 2, and the 6- to 9-m (21- to 30-ft) was SU Interval 3. Thus, for the 15 borings advanced in SU06, 45 samples were used in the MARSSIM assessment of the three SU intervals. For the 22 borings advanced in SU07, 66 samples were used in the MARSSIM assessment of the three SU intervals.

The assessment of the SU interval data sets was performed using the *Compass Software*. The *Compass Software* allows the user to set up the analytical data for all radiological analytes in a readable input file format, and then evaluate the data set using the applicable MARSSIM methods. The *Compass Software* evaluations of each of the three SU intervals are in **Appendix D**.

The Work Plan specifies Site cleanup levels for three radionuclides (Th-232, U-234 and U-238). The MARSSIM addresses evaluation of multiple radionuclides by employing the Sum of Ratios (SOR) Method. First, for SP samples, the ratio of the concentration for each radionuclide to its corresponding Site cleanup level is calculated. The ratios for all three radionuclides are then

summed for a single sample. This results in a single unitless SOR value for each sample. The samples in a given SU interval are then evaluated using the statistical methods inherent in the *Compass Software*.

3.1.1.1 SU06 Assessment

Evaluation of the DL and SP samples in SU06 indicates that the concentrations are below the radionuclide Site cleanup levels. While most samples exhibited natural prevalence of uranium, samples at soil boring 007, at depths of 17, 27 and 30 ft bgs, indicated concentrations of U-234 greater than concentrations of U-238. SU06, soil boring 007 is in the same subcell (I06) as Historic Leach Pool (LPH) 21 (**Figure 3**). LPH21 is discussed in greater detail in Section 4.0 of this report.

3.1.1.2 SU07 Assessment

Evaluation of the DL and SP samples in SU07 indicates that the concentrations are below the radionuclide Site cleanup levels. There is an indication in three soil borings (014, 031 and 032) immediately below the bottom of the concrete slab that disturbed material (fill) contains U-238 (25 to 33 picoCuries per gram [pCi/g]). Borings 007, 017 and 035 indicated concentrations of U-234 greater than concentrations of U-238 just beneath the bottom of the concrete slab.

3.1.2 Decision Analysis

The decision analysis for the radiological analytical results was based on the default null hypothesis recommended in the MARSSIM, which states: "The residual radioactivity in the survey unit exceeds the release criterion." The MARSSIM "Sign Test" (assuming no contribution from background radionuclides) was used to reject the null hypothesis. When the null hypothesis is rejected, the SU passes and qualifies for release. If the null hypothesis cannot be rejected, further investigation or remedial action may be necessary.

As stated earlier, each of the three intervals was evaluated independently in each SU. Therefore, there were a total of six independent evaluations. The following table summarizes the results of the *Compass Software* evaluations.

SU	SU Interval	Depth Range (ft)	# Samples (N)		Sum of Ratios		Null Hypothesis	SU Interval Status
			Required	Actual	Avg	Max		
06	1	0-10	13	15	0.31	0.62	Rejected	Passes
	2	11-20	13	15	0.13	0.80	Rejected	Passes
	3	21-30	14	15	0.14	0.97	Rejected	Passes
07	1	0-10	15	22	0.40	1.22	Rejected	Passes
	2	11-20	13	22	0.10	0.29	Rejected	Passes
	3	21-30	13	22	0.07	0.13	Rejected	Passes

The evaluation of the SP analytical results for SU06 and SU07 using the *Compass Software* indicated that the average concentrations of Th-232, U-234, and U-238 in the soils beneath the 140 Building are below the Site cleanup levels.

3.2 VOLATILE ORGANIC COMPOUNDS

The VOC analytical results of TCE and PCE were compared to the Site cleanup levels of 0.7 milligrams per kilogram (mg/kg) and 1.82 mg/kg, respectively. The following table provides the highest concentrations of VOC sample analytical results from **Table 1**.

SU	Depth Range (ft)	TCE (mg/kg)	PCE (mg/kg)
06	0-10	0.0078	0.030
	11-20	0.0026 U	0.0026 U
	21-30	0.0026 U	0.0026 U
07	0-10	0.0016 J	0.022
	11-20	0.0026 U	0.0026 U
	21-30	0.0026 U	0.0026 U

Notes: U – not detected J – estimated value

Based on a review of DL and SP analytical data, TCE and PCE were not detected above Site cleanup levels.

3.3 METALS

The Ni analytical results were compared to the Site cleanup level (560 mg/kg) while the Be results were compared to NYSDEC TAGM #4046 values (0.16 mg/kg or Site background) and other published literature sources for New York State soils. The following table provides the highest concentrations of Ni and Be from **Table 1**.

SU	Depth Range (ft)	Ni (mg/kg)	Be (mg/kg)
06	0-10	330	0.91
	11-20	3.1J	0.21J
	21-30	3.5J	0.38J
07	0-10	82.8J	1.2J
	11-20	42.3J	0.63
	21-30	4.6	0.31J

Based on a review of DL and SP analytical data, Ni was not detected above the Site cleanup level. Several samples had concentrations of Be above the TAGM value of 0.16 mg/kg. However, Be concentrations in New York soils are reported to range between 0 to 7 mg/kg^{1, 2}. The Be soil results are interpreted to be within the anticipated range in soils for New York State.

¹ Schacklette, H.T., and J.G. Boerngen. 1984. *Elemental Concentrations in Soils and Other Surficial Materials of the Conterminous United States*. US Geological Survey. Pub. 1270.

² Dragun, J. and A. Chiasson. 1991. *Elements in North American Soils*. Hazardous Materials Control Resources Institute. Greenbelt, Maryland.

4.0 ADDITIONAL INVESTIGATIONS

In addition to the systematic characterization of soils beneath the 140 Building, an investigation of the soils was implemented concurrently to identify and delineate contaminants associated with the LPHs. That investigation was implemented in accordance with the *Systematic Subsurface Soil Sampling and Analysis Plan Historic Leach Pools, September 2004, Revision 1: October 2004* (LPH Plan). The purpose of the LPH investigation was to identify and delineate contaminants, if any, associated with suspected LPHs.

There were 14 LPHs investigated under the LPH Plan, 3 of which were located beneath the 140 Building, 2 in SU06 (LPH20 and LPH21), and 1 in SU07 (LPH34). All three LPHs are shown on **Figure 3** and the soil boring sample results are in **Table 3**.

4.1 LPH20

LPH20, soil boring 04, had contaminants above the Site cleanup level for Ni at 1 ft bgs (1,105 J mg/kg). The samples at 1 to 2 ft bgs from three soil borings (01, 03 and 05) north of soil boring 04 in LPH20 indicated Ni concentrations below the Site cleanup level.

The Ni result above the Site cleanup level indicates the presence of contaminants in shallow soils (fill) beneath the concrete slab. The Ni result in the fill does not indicate the potential presence of contaminants to undisturbed subsurface soils from LPH20.

LPH20 did not have radiological and VOC contaminants above Site cleanup levels.

4.2 LPH21

LPH21, soil boring 01, had contaminants above the Site cleanup levels for Th-232, U-234, U-238, TCE and PCE from 16 to 19 ft bgs (estimated bottom of the LPH). There were no detected contaminants above the Site cleanup levels below 20 feet bgs. LPH21, soil boring 05, had contaminants above the Site cleanup levels for U-238 at 10 ft bgs. The isotopic ratios of U-234 to U-238 (soil boring 1 at 16 and 30 ft bgs and soil borings 3 and 4 at 30 ft bgs) indicate that the radiological contaminants associated with LPH21 are from enriched uranium.

LPH21 did not have Ni contaminants above Site cleanup levels.

4.3 LPH34

LPH34 did not have contaminants above the Site cleanup levels.

5.0 CONCLUSIONS

SU06, soil boring 007, at depths of 17, 27 and 30 ft bgs, indicated concentrations of U-234 greater than concentrations of U-238. Evaluation of the samples in SU07 indicated three soil

borings (014, 031 and 032) immediately below the bottom of the concrete slab with disturbed material (fill) containing U-238 (25 to 33 pCi/g). Evaluation of the samples in SU06 and SU07 indicates that the values are below the radionuclide Site cleanup levels.

Direct comparison of the analytical results from SU06 and SU07 for VOCs and Ni to Site cleanup levels indicates that there were no contaminants above the Site cleanup levels. Several locations had Be in excess of the TAGM values but are within the reported range in soils for New York State.

Sampling conducted during the LPH investigation indicated that residual contaminants above Site cleanup levels are present at LPH20 and LPH21. The Ni result in LPH20 indicates the potential for contaminants in shallow disturbed soils (fill) at other locations beneath the concrete slab. The sample results above the Site cleanup levels at LPH21 are an indication of contaminants to soils at 10 ft bgs. In addition, the isotopic ratios of U-234 to U-238 (soil boring 1 at 16 and 30 ft bgs and soil borings 3 and 4 at 30 ft bgs) indicate that radiological contaminants are characteristic of enriched uranium. The results of the LPH investigation are detailed in the *Systematic Subsurface Sampling and Analysis Report, Historic Leach Pools*.

Based on the MARSSIM evaluation for radionuclides and the comparison of analytical results for VOCs and Ni to Site cleanup levels, the soils within the boundaries of SU06 and SU07 meet the requirements to be released for unrestricted use with the exception of areas near LPH20 and LPH21.

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	001	28336	1.0	0.61		10.54 J			<100	
06	001	28337	2.0	0.54		3.48 J				
06	001	28338	3.0	0.22 J		1.69			<100	
06	001	28342	4.0	0.38	1.08	0.77	0.0025 U	0.0025 U	2.1 J	0.13 J
06	001	28352	6.0	0.64		0.96 J				
06	001	28353	7.0	0.49 J		2.96			<100	
06	001	28354	9.0	0.39		1.63 J			<100	
06	001	28355	10.0	0.35		1.83 J				
06	001	28356	11.0	0.40 J		2.07			<100	
06	001	28357	12.0	0.35		1.43 J				
06	001	28358	13.0	0.34		1.15 J			<100	
06	001	28359	14.0	0.191	0.187	0.223	0.0025 U	0.0025 U	2.8 J	0.14 J
06	001	28365	16.0	0.34 J		0.39				
06	001	28366	17.0	0.07		1.17 J			<100	
06	001	28367	19.0	0.17		1.10 J			<100	
06	001	28368	20.0	0.18 J		1.73				
06	001	28369	21.0	0.75		1.99 J			<100	
06	001	28370	23.0	0.22		0.85 J			<100	
06	001	28371	24.0	0.160	0.200	0.130	0.0025 U	0.0025 U	1.1 J	0.098 J
06	001	28376	26.0	0.25 J		0.88 J				
06	001	28377	27.0	0.17		0.96 J			<100	
06	001	28378	28.0	0.29		0.93 J				
06	001	28379	29.0	0.26 J		1.92			<100	
06	001	28384	30.0	0.120	0.127	0.134	0.0026 U	0.0026 U	3.1 J	0.15 J
06	002	27973	0.0	1.36		8.65			41.6 J	
06	002	27977	1.0	0.474	2.44	1.19	0.0025 U	0.0025 U	3.7 J	0.26 J
06	002	27983	3.0	0.52		1.86 J				
06	002	27984	4.0	0.64		1.62 J			<100	
06	002	27985	5.0	0.46		0.88 J				
06	002	27986	6.0	0.74		2.17			<100	
06	002	27993	7.0	0.52		0.43				
06	002	27994	8.0	0.34		1.13 J			<100	
06	002	27995	10.0	0.26		1.14			<100	
06	002	28008	11.0	0.417	0.317	0.329	0.0025 U	0.0025 U	1.7 J	0.18 J
06	002	28009	13.0	0.22		0.96 J				
06	002	28010	14.0	0.32		1.32 J			<100	
06	002	28012	15.0	0.21		1.43				
06	002	28013	16.0	0.26		1.21			<100	
06	002	28014	17.0	0.20		0.86				
06	002	28015	18.0	0.30		1.38 J			<100	
06	002	28016	20.0	0.05		1.03 J			<100	
06	002	28017	21.0	0.141	0.184	0.206	0.0026 U	0.0026 U	1.3 J	0.19 J
06	002	28023	23.0	0.25		0.53 J				
06	002	28026	24.0	0.19		0.77 J			<100	
06	002	28027	25.0	0.25		1.06 J				
06	002	28030	26.0	0.31		1.04			<100	
06	002	28031	27.0	0.21		0.51 J				
06	002	28038	28.0	NS		NS			<100	
06	002	28039	29.0	0.23		0.52 UJ				
06	002	28040	30.0	0.151	0.088 J	0.167	0.0026 U	0.0026 U	2.3 J	0.21 J
06	003	27406	0.0	NS		NS			326	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	003	27407	2.0	0.74		1.23 UJ			<100	
06	003	27415	3.0	0.78		1.66 J				
06	003	27416	4.0	0.53		1.18 J			<100	
06	003	27417	5.0	0.54		3.60 J				
06	003	27418	6.0	0.65		1.53 J			<100	
06	003	27421	7.0	1.08	0.75	0.76	0.0030 U	0.0030 U	6.7	0.50 J
06	003	27422	10.0	0.24		0.45 J			<100	
06	003	27423	11.0	0.31		0.87 J				
06	003	27424	12.0	0.28 J		0.60 J			<100	
06	003	27431	14.0	0.25		1.37			<100	
06	003	27432	15.0	0.23		0.88 J				
06	003	27433	16.0	0.26 J		0.37			<100	
06	003	27436	17.0	0.187	0.204	0.173	0.0025 U	0.0025 U	1.6 J	0.13 J
06	003	27440	20.0	0.29		0.82 J			<100	
06	003	27441	21.0	0.03		0.38				
06	003	27442	22.0	0.24 J		1.55			<100	
06	003	27450	24.0	0.24		0.55 J			<100	
06	003	27451	26.0	0.06		0.76 J			<100	
06	003	27453	27.0	0.257	0.266	0.180	0.0026 U	0.0026 U	2.9 J	0.21 J
06	003	27454	29.0	0.33 J		1.69				
06	003	27457	30.0	0.198	0.140	0.197	0.0026 U	0.0026 U	3.5 J	0.32 J
06	004	27310	0.0	1.03		2.48 J				
06	004	27311	1.0	1.45		3.75 J			<100	
06	004	27312	2.0	0.63		4.34 J				
06	004	27313	3.0	0.55		0.50 UJ			<100	
06	004	27318	4.0	0.65	0.69	0.410	0.0025 U	0.0025 U	4.8	0.31 J
06	004	27322	6.0	0.47		1.27 J				
06	004	27323	7.0	0.43		1.05 J			<100	
06	004	27324	9.0	0.05		1.05 J			<100	
06	004	27330	11.0	0.12		2.28 J			<100	
06	004	27333	12.0	0.30		1.55 J				
06	004	27334	13.0	0.05		2.49 J			<100	
06	004	27335	14.0	0.261	0.211	0.213	0.0025 U	0.0025 U	1.4 J	0.19 J
06	004	27339	16.0	0.23		1.60 J				
06	004	27340	17.0	0.26		1.64 J			<100	
06	004	27347	19.0	0.24		3.04 J			<100	
06	004	27358	20.0	0.16		0.69 J				
06	004	27359	21.0	0.30		0.65 J			<100	
06	004	27360	23.0	0.37		1.11 J			<100	
06	004	27365	24.0	0.187	0.185	0.177	0.0025 U	0.0025 U	3.3 J	0.20 J
06	004	27373	26.0	0.25		1.82 J				
06	004	27374	27.0	0.26		0.70 J			<100	
06	004	27375	28.0	0.31		1.71 J				
06	004	27376	29.0	0.04		1.33 J			<100	
06	004	27379	30.0	0.121	0.138	0.123 J	0.0025 U	0.0025 U	2.9 J	0.38 J
06	005	26850	0.0	0.96		13.10				
06	005	26851	1.0	0.83	2.37	1.87	0.0027 U	0.0024 J	6.6	0.18 J
06	005	26854	3.0	0.81 J		0.87				
06	005	26855	4.0	0.62		2.46 J			<100	
06	005	26865	5.0	0.78		2.45				
06	005	26866	6.0	1.00 J		1.64 J			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	005	26867	7.0	0.34		1.31 J				
06	005	26868	8.0	0.29 J		0.47 J			<100	
06	005	26869	9.0	0.24		0.32 UJ				
06	005	26870	10.0	0.47		1.09 J			<100	
06	005	26873	11.0	0.268	0.241	0.295	0.0025 U	0.0025 U	3.1 J	0.20 J
06	005	26874	13.0	0.37 J		1.46				
06	005	26875	14.0	0.45		1.11 J			<100	
06	005	26887	16.0	0.23		0.53 J			<100	
06	005	26888	18.0	0.22 J		1.69			<100	
06	005	26889	19.0	0.29		0.77 J				
06	005	26890	20.0	0.24		0.80 J			<100	
06	005	26899	21.0	0.235	0.220	0.227	0.0025 U	0.0025 U	1.9 J	0.17 J
06	005	26900	23.0	0.32		0.89 J				
06	005	26907	28.0	0.25 J		0.71 J			<100	
06	005	26908	29.0	0.25		1.13 J				
06	005	26909	30.0	0.183	0.154	0.222	0.0025 U	0.0025 U	3.0 J	0.25 J
06	006	28396	0.0	0.68		3.20 J				
06	006	28398	1.0	0.58	0.50	0.61	0.0025 U	0.0025 U	9.8	0.91
06	006	28403	3.0	0.42		2.07				
06	006	28404	4.0	0.83		1.53 J			<100	
06	006	28407	5.0	0.47		1.68				
06	006	28408	6.0	0.16		2.12			<100	
06	006	28409	7.0	0.50		3.45 J				
06	006	28410	8.0	0.36		0.62			<100	
06	006	28412	10.0	0.32		2.50 J			<100	
06	006	28413	11.0	0.249	0.233	0.244	0.0025 U	0.0025 U	1.3 J	0.10 J
06	006	28414	13.0	0.37		0.73				
06	006	28415	14.0	0.29		1.04 J			<100	
06	006	28416	15.0	0.19		0.41				
06	006	28417	16.0	0.05		0.63			<100	
06	006	28418	18.0	0.28		0.88 J			<100	
06	006	28419	20.0	0.24		0.42			<100	
06	006	28420	21.0	0.223	0.180	0.170	0.0025 U	0.0025 U	1.5 J	0.11 J
06	006	28421	24.0	0.33		1.18			<100	
06	006	28422	25.0	0.03		0.55 J				
06	006	28423	26.0	0.04		2.02			<100	
06	006	28424	27.0	0.21		0.38				
06	006	28425	28.0	0.30		1.92 J			<100	
06	006	28426	29.0	0.04		0.81				
06	006	28427	30.0	0.17 U	0.148	0.113	0.0025 U	0.0025 U	2.4 J	0.17 J
06	007	28086	0.0	0.54		3.90			<100	
06	007	28087	1.0	1.04		6.25				
06	007	28088	2.0	0.80		2.26 J			<100	
06	007	28098	3.0	0.34		1.00 J				
06	007	28097	4.0	0.39		1.23 J			<100	
06	007	28103	5.0	0.67		2.04 J				
06	007	28104	6.0	0.83		1.84			<100	
06	007	28107	7.0	0.42	0.42	0.380	0.00071 J	0.0025 U	1.7 J	0.15 J
06	007	28108	10.0	0.28		0.70 J			<100	
06	007	28120	11.0	0.26		1.03 J				
06	007	28121	12.0	0.32		3.65			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	007	28128	13.0	0.22		8.20				
06	007	28129	14.0	0.33		13.56			<100	
06	007	28130	15.0	0.33		16.59				
06	007	28131	16.0	0.39		17.29			<100	
06	007	28144	17.0	0.281	23.8	11.2	0.0025 U	0.0025 U	1.9 J	0.11 J
06	007	28143	19.0	0.39		15.88				
06	007	28145	20.0	0.50		17.07			<100	
06	007	28148	21.0	0.37		12.72				
06	007	28149	22.0	0.54		9.51			<100	
06	007	28157	23.0	0.30		10.10				
06	007	28158	24.0	0.26		16.02			<100	
06	007	28159	25.0	0.37		16.53				
06	007	28160	26.0	0.45		30.19			<100	
06	007	28171	27.0	0.239	29.0	15.0	0.0025 U	0.0025 U	2.8 J	0.20 J
06	007	28172	29.0	0.12		14.68				
06	007	28173	30.0	0.44	20.7	11.5	0.0025 U	0.0025 U	2.2 J	0.15 J
06	008	27868	1.0	0.64		6.14			<100	
06	008	27869	2.0	0.81		5.50				
06	008	27870	3.0	0.50		2.18			<100	
06	008	27882	4.0	0.356	1.91	0.83	0.0025 U	0.00061 J	2.8 J	0.22 J
06	008	27886	6.0	0.67		1.74 J				
06	008	27887	7.0	0.42		0.74 J			<100	
06	008	27888	9.0	0.27		0.37 J			<100	
06	008	27897	10.0	0.28		1.67				
06	008	27898	11.0	0.40		1.32 J			<100	
06	008	27899	12.0	0.30 J		0.96				
06	008	27900	13.0	0.32		0.39 J			<100	
06	008	27911	14.0	0.147	0.236	0.175	0.0025 U	0.0025 U	1.5 J	0.17 J
06	008	27915	16.0	0.26		1.42				
06	008	27916	17.0	0.25		0.99 J			<100	
06	008	27917	19.0	0.25		0.44 J			<100	
06	008	27918	21.0	0.06		2.46			<100	
06	008	27931	24.0	0.259	0.205	0.170	0.0026 U	0.0026 U	1.8 J	0.19 J
06	008	27934	26.0	0.23		0.46				
06	008	27935	27.0	0.26		0.78 J			<100	
06	008	27936	28.0	0.21		1.06				
06	008	27937	29.0	0.29		1.95 J			<100	
06	008	27938	30.0	0.139	0.108	0.183	0.0026 U	0.0026 U	1.5 J	0.17 J
06	009	27681	0.0	0.74		17.67			92.4 J	
06	009	27682	1.0	0.97	7.40	6.06	0.0028 U	0.0071	330	0.41 J
06	009	27683	3.0	0.33		2.87				
06	009	27684	4.0	0.44		0.69			<100	
06	009	27691	5.0	0.65		3.00				
06	009	27692	6.0	0.53		1.89			<100	
06	009	27693	7.0	0.91		0.94				
06	009	27694	8.0	0.27		0.77 J			<100	
06	009	27704	10.0	0.25		1.07 J			<100	
06	009	27705	11.0	0.269	0.311	0.245	0.0025 U	0.0025 U	1.8 J	0.18 J
06	009	27706	13.0	0.24		0.64 J				
06	009	27707	14.0	0.26		1.29 J			<100	
06	009	27708	15.0	0.28		1.97				

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	009	27709	16.0	0.28		0.64			<100	
06	009	27710	17.0	0.23		1.15				
06	009	27711	18.0	0.29		0.61 J			<100	
06	009	27712	19.0	0.23		0.80 J				
06	009	27713	20.0	0.24		1.02 J			<100	
06	009	27720	21.0	0.249	0.174	0.179	0.0026 U	0.0026 U	0.98 J	0.13 J
06	009	27721	23.0	0.25		1.24 J				
06	009	27732	24.0	0.26		1.24			<100	
06	009	27733	25.0	0.34		0.95 J				
06	009	27739	26.0	0.22		0.95 J			<100	
06	009	27740	27.0	0.27		1.98				
06	009	27741	28.0	NS		NS			<100	
06	009	27742	29.0	0.22		1.21				
06	009	27743	30.0	0.149	0.149	0.128	0.0025 U	0.0025 U	1.7 J	0.13 J
06	010	27583	0.0	1.20 J		5.87			<100	
06	010	27584	1.0	1.25 J		2.00				
06	010	27585	2.0	0.81 J		2.04			<100	
06	010	27586	3.0	0.60 J		0.65				
06	010	27587	4.0	0.45 J		0.60			<100	
06	010	27591	5.0	0.95 J		1.28 J				
06	010	27592	6.0	0.78 J		1.57 J			<100	
06	010	27593	7.0	0.220	0.294	0.272	0.0026 U	0.0026 U	1.4 J	0.14 J
06	010	27594	10.0	0.35 J		1.59			<100	
06	010	27596	11.0	0.04 UJ		1.14				
06	010	27597	12.0	0.38 J		0.82 J			<100	
06	010	27598	13.0	0.29 J		0.59				
06	010	27599	14.0	0.36 J		1.18 J			<100	
06	010	27607	15.0	0.26 J		0.19				
06	010	27608	16.0	0.20 J		0.40			<100	
06	010	27609	17.0	0.105	0.134	0.133	0.0026 U	0.0026 U	0.89 J	0.092 J
06	010	27610	20.0	0.23 J		1.29			<100	
06	010	27611	21.0	0.25 J		0.89 J				
06	010	27612	22.0	0.31 J		2.27			<100	
06	010	27622	23.0	0.29 J		2.32 J				
06	010	27623	24.0	0.35 J		1.08			<100	
06	010	27633	25.0	0.18		0.77 J				
06	010	27634	26.0	0.26		1.54			<100	
06	010	27635	27.0	0.181	0.159	0.127	0.0026 U	0.0026 UJ	1.3 J	0.16 J
06	010	27636	29.0	0.05		1.06 J				
06	010	27642	30.0	0.148	0.167	0.145	0.0026 U	0.0026 UJ	1.1 J	0.17 J
06	012	28202	0.0	0.95		6.96 J				
06	012	28203	1.0	0.75		2.49 J			<100	
06	012	28204	3.0	0.85 J		6.09			<100	
06	012	28205	4.0	0.79	3.19	2.33	0.0078	0.024	5.6	0.20 J
06	012	28206	6.0	0.63		1.65 J				
06	012	28207	7.0	0.90		2.35 J			<100	
06	012	28217	8.0	0.42 J		2.57				
06	012	28218	9.0	0.23		0.38 UJ			<100	
06	012	28219	10.0	0.38 J		2.89				
06	012	28220	11.0	0.30		1.31 J			<100	
06	012	28221	12.0	0.28 J		1.21 J				

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	012	28222	13.0	0.26		1.17 J			<100	
06	012	28223	14.0	0.172	0.208	0.164	0.0025 U	0.0025 U	1.8 J	0.12 J
06	012	28233	16.0	0.24		1.38 J				
06	012	28234	17.0	0.23		0.43			<100	
06	012	28235	18.0	0.20		1.38				
06	012	28236	19.0	0.27		0.48			<100	
06	012	28237	20.0	0.35		1.29				
06	012	28238	21.0	0.09		1.88 J			<100	
06	012	28256	23.0	0.18		1.24			<100	
06	012	28257	24.0	0.178	0.301	0.163	0.0025 U	0.0025 U	0.99 J	0.058 J
06	012	28264	26.0	0.33		0.86 J				
06	012	28265	27.0	0.23		1.84			<100	
06	012	28271	28.0	0.28		1.70				
06	012	28272	29.0	0.18		0.79 J			<100	
06	012	28273	30.0	0.089 J	0.185	0.117	0.0025 U	0.0025 U	1.9 J	0.12 J
06	013	28277	0.0	0.65		1.13 J				
06	013	28278	1.0	0.64	5.19	1.93	0.0077	0.030	7.6 J	0.34 J
06	013	28292	3.0	0.81		2.81 J				
06	013	28293	4.0	0.59		1.37 J			<100	
06	013	28294	5.0	0.55		2.11				
06	013	28295	6.0	0.61		1.23 J			<100	
06	013	28296	7.0	0.48		2.10				
06	013	28297	8.0	0.31		0.46 J			<100	
06	013	28298	10.0	0.35		0.38			<100	
06	013	28299	11.0	0.210	0.224	0.215	0.0025 U	0.0025 U	1.2 J	0.071 J
06	013	28301	13.0	0.27		0.38				
06	013	28302	14.0	0.31		1.45 J			<100	
06	013	28303	15.0	0.33		0.73 J				
06	013	28304	16.0	0.29		0.96 J			<100	
06	013	28307	17.0	0.15		0.60				
06	013	28308	18.0	0.06		2.18			<100	
06	013	28309	20.0	0.31		0.56			<100	
06	013	28318	21.0	0.302	0.194	0.138	0.0025 U	0.0025 U	2.8 J	0.086 J
06	013	28319	23.0	0.34		0.56 J				
06	013	28320	24.0	0.32 J		0.46			<100	
06	013	28321	25.0	0.26 J		1.45 J				
06	013	28322	26.0	0.27		2.40 J			<100	
06	013	28323	27.0	0.30		1.58 J				
06	013	28324	28.0	0.23 J		0.73 J			<100	
06	013	28325	29.0	0.45		1.84 J				
06	013	28326	30.0	0.240	0.175	0.166	0.0025 U	0.0025 U	3.2 J	0.087 J
06	014	27473	0.0	0.99 J		40.65			165	
06	014	27477	1.0	1.09		3.27				
06	014	27478	2.0	0.74		0.78			<100	
06	014	27488	3.0	0.44 J		1.68				
06	014	27489	4.0	0.76 J		2.43			<100	
06	014	27500	5.0	0.86 J		1.22 J				
06	014	27501	6.0	0.98 J		2.88			<100	
06	014	27502	7.0	0.286	0.322	0.231	0.0025 U	0.0025 U	1.3 J	0.14 J
06	014	27503	10.0	0.32 J		1.39 J			<100	
06	014	27512	11.0	0.36 J		0.58 J			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	014	27513	12.0	0.36 J		0.94 J				
06	014	27514	14.0	0.38 J		1.05 J			<100	
06	014	27521	15.0	0.40 J		0.69				
06	014	27522	16.0	0.25 J		0.41			<100	
06	014	27528	17.0	0.172	0.139	0.147	0.0025 U	0.0025 U	1.0 J	0.11 J
06	014	27529	19.0	0.17 J		0.42 J				
06	014	27530	20.0	0.24 J		1.32			<100	
06	014	27531	21.0	0.29 J		1.23				
06	014	27532	22.0	0.35 J		0.94 J			<100	
06	014	27543	23.0	0.24 J		1.06				
06	014	27544	24.0	0.32 J		0.51			<100	
06	014	27549	25.0	0.25 J		0.86 J				
06	014	27550	26.0	0.23 J		0.63 J			<100	
06	014	27555	27.0	0.168	0.156	0.167	0.0025 U	0.0025 U	1.9 J	0.24 J
06	014	27556	29.0	0.19 J		0.58				
06	014	27561	30.0	0.262	0.122	0.141	0.0026 U	0.0026 U	1.4 J	0.14 J
06	015	27763	0.0	0.80		15.24				
06	015	27764	1.0	1.03		13.74			<100	
06	015	27765	3.0	0.95		5.39			<100	
06	015	27776	4.0	1.07	4.62	4.89	0.00054 J	0.0018 J	13.1	0.49 J
06	015	27777	7.0	0.50		0.78			<100	
06	015	27778	9.0	0.28		1.24			<100	
06	015	27787	10.0	0.26		1.22 J				
06	015	27788	11.0	0.25		0.55 J			<100	
06	015	27789	12.0	0.42		1.20 J				
06	015	27790	13.0	0.31		0.87 J			<100	
06	015	27791	14.0	0.259	0.164	0.182	0.0025 U	0.0025 U	1.4 J	0.11 J
06	015	27798	16.0	0.34		0.55				
06	015	27799	17.0	0.10		1.30 J			<100	
06	015	27800	18.0	0.16		0.42				
06	015	27801	19.0	0.23		1.25 J			<100	
06	015	27802	20.0	0.25		1.09 J				
06	015	27803	21.0	0.24		1.12			<100	
06	015	27814	22.0	0.34		0.83 J				
06	015	27815	23.0	0.18		1.01 J			<100	
06	015	27816	24.0	0.167	0.131	0.140	0.0026 U	0.0026 U	2.5 J	0.19 J
06	015	27826	26.0	0.32		0.37				
06	015	27827	27.0	0.04		0.75 J			<100	
06	015	27828	28.0	0.21		0.74 J				
06	015	27829	29.0	0.06		0.65 J			<100	
06	015	27832	30.0	0.196	0.180	0.138	0.0025 U	0.0025 U	1.5 J	0.12 J
06	016	27059	0.0	0.55		2.44				
06	016	27060	1.0	0.72	5.76	5.42	0.0026 J	0.018 J	21.7	0.30 J
06	016	27061	3.0	0.37 J		1.83 J				
06	016	27062	4.0	0.37 J		1.46 J			<100	
06	016	27063	5.0	0.31 J		1.44 J				
06	016	27064	6.0	0.86		1.27 J			<100	
06	016	27065	7.0	0.41		0.39				
06	016	27066	8.0	0.30		0.52 J			<100	
06	016	27067	9.0	0.47		0.87 J				
06	016	27068	10.0	0.21		1.80			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	016	27082	11.0	0.170	0.213	0.235	0.0025 U	0.0025 U	2.3 J	0.21 J
06	016	27083	13.0	0.34		1.45				
06	016	27084	14.0	0.29		0.89 J			<100	
06	016	27085	15.0	0.27		1.22				
06	016	27086	16.0	0.33		1.42 J			<100	
06	016	27087	17.0	0.23 J		0.53 J				
06	016	27088	18.0	0.33		0.97 J			<100	
06	016	27092	19.0	0.04		0.89				
06	016	27093	20.0	0.23		1.08 J			<100	
06	016	27094	21.0	0.328	0.322	0.329	0.0025 U	0.0025 U	0.92 J	0.12 J
06	016	27095	23.0	0.32 J		0.68 J				
06	016	27109	24.0	0.23		0.33			<100	
06	016	27110	25.0	0.31		0.74 J				
06	016	27111	26.0	0.29		0.76 J			<100	
06	016	27112	27.0	0.26		0.68				
06	016	27115	28.0	0.15 J		0.32 UJ			<100	
06	016	27116	29.0	0.19 J		0.41 J				
06	016	27117	30.0	0.225	0.128	0.145	0.0026 U	0.0026 U	1.8 J	0.22 J
07	004	29453	0.0	0.79		5.00			<100	
07	004	29454	1.0	0.386	0.53	0.47	0.0026 U	0.0026 UJ	13.6	0.47 J
07	004	29455	3.0	0.42		1.77 J				
07	004	29456	4.0	0.37		1.43			<100	
07	004	29457	5.0	0.42		0.90				
07	004	29458	6.0	1.32		1.32 J			<100	
07	004	29459	7.0	0.54		2.04				
07	004	29460	8.0	0.91		1.55 J			<100	
07	004	29461	9.0	1.32		2.56 J				
07	004	29462	10.0	0.69		1.77 J			<100	
07	004	29463	11.0	0.74	0.64	0.46	0.0026 U	0.0026 UJ	9.2	0.63
07	004	29466	13.0	0.23		0.44				
07	004	29467	14.0	0.32		1.44			<100	
07	004	29468	15.0	0.31		1.85				
07	004	29469	16.0	0.23		0.86 J			<100	
07	004	29470	17.0	0.03		1.35 J				
07	004	29471	18.0	0.20		0.47			<100	
07	004	29472	19.0	0.32		0.53 J				
07	004	29473	20.0	0.31		0.66 J			<100	
07	004	29474	21.0	0.207 J	0.220	0.154	0.0026 U	0.0026 UJ	1.0 J	0.13 J
07	004	29475	23.0	0.21		0.41				
07	004	29476	24.0	0.29		0.99 J			<100	
07	004	29477	25.0	0.20		1.08				
07	004	29478	26.0	0.24		0.73 J			<100	
07	004	29479	27.0	0.19		0.98 J				
07	004	29480	28.0	0.09		1.21			<100	
07	004	29481	29.0	0.22		1.11				
07	004	29482	30.0	0.125	0.111	0.120	0.0026 U	0.0026 UJ	2.2 J	0.16 J
07	005	29291	0.0	0.40		0.40				
07	005	29297	2.0	0.88		13.89			82.8 J	
07	005	29298	6.0	1.54		1.76 J			<100	
07	005	29306	7.0	0.364	0.322	0.305	0.0025 U	0.0025 U	2.3 J	0.16 J
07	005	29307	9.0	0.47		0.69 J				

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	005	29308	10.0	0.48		1.71 J			<100	
07	005	29309	11.0	0.29		1.85				
07	005	29310	12.0	0.27		0.43			<100	
07	005	29313	13.0	0.30		0.54 J				
07	005	29314	14.0	0.33		1.12 J			<100	
07	005	29317	15.0	0.53 J		1.73				
07	005	29318	16.0	0.26		0.54 J			<100	
07	005	29320	17.0	0.176	0.157	0.193	0.0026 U	0.0026 U	1.8 J	0.048 J
07	005	29321	19.0	0.36 J		0.78 J				
07	005	29322	20.0	0.36 J		1.65			<100	
07	005	29327	21.0	0.38 J		0.96 J				
07	005	29328	22.0	0.25 J		2.01			<100	
07	005	29329	24.0	0.05		2.11 J			<100	
07	005	29332	25.0	0.16		1.92				
07	005	29333	26.0	0.24 J		0.30			<100	
07	005	29334	27.0	0.201	0.162	0.178	0.0026 U	0.0026 U	1.1 J	0.084 J
07	005	29340	29.0	0.05		1.78				
07	005	29341	30.0	0.141	0.225	0.182	0.0026 U	0.0026 U	2.1 J	0.23 J
07	006	29250	0.0	0.66		3.03				
07	006	29251	1.0	0.48		1.62 J			<100	
07	006	29254	2.0	1.03		1.57 J				
07	006	29255	3.0	1.01		1.94 J			<100	
07	006	29256	4.0	0.78	0.62	0.55	0.0025 U	0.0025 U	2.0 J	0.12 J
07	006	29257	6.0	0.39		1.32				
07	006	29258	7.0	0.62		1.98 J			<100	
07	006	29259	8.0	0.33		3.31 J				
07	006	29260	9.0	0.33		1.16 J			<100	
07	006	29265	10.0	0.24		0.68 J				
07	006	29266	11.0	0.22		1.74			<100	
07	006	29267	12.0	0.36		2.09 J				
07	006	29268	13.0	0.44		1.03			<100	
07	006	29269	14.0	0.248	0.296	0.271	0.0026 U	0.0026 U	2.3 J	0.084 J
07	006	29270	16.0	0.23		0.67 J				
07	006	29271	17.0	0.28		0.44 J			<100	
07	006	29273	19.0	0.22		1.43			<100	
07	006	29279	20.0	0.39		1.15				
07	006	29280	21.0	0.02		1.31			<100	
07	006	29281	22.0	0.29		0.88 J				
07	006	29282	23.0	0.27		0.63 J			<100	
07	006	29283	24.0	0.207	0.318	0.311	0.0026 U	0.0026 U	1.1 J	0.079 J
07	006	29284	26.0	0.21		0.78 J				
07	006	29285	27.0	0.24		1.23 J			<100	
07	006	29286	28.0	0.22		0.42 J				
07	006	29287	29.0	0.20		1.38			<100	
07	006	29288	30.0	0.125	0.133	0.131	0.0026 U	0.0026 U	1.7 J	0.13 J
07	007	29206	0.0	0.63		1.74 J			<100	
07	007	29209	1.0	0.73	15.3	8.8	0.0028 U	0.0028 U	19.3	0.61
07	007	29210	3.0	0.51		2.94				
07	007	29211	4.0	0.57		6.65			<100	
07	007	29214	5.0	0.32		2.60				
07	007	29215	6.0	0.35		5.94			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	007	29218	7.0	0.21		1.16				
07	007	29219	8.0	0.37		0.90 J			<100	
07	007	29220	9.0	0.25		1.33 J				
07	007	29221	10.0	0.41		1.27 J			<100	
07	007	29222	11.0	0.222	0.320	0.299	0.0026 U	0.0026 U	3.2 J	0.26 J
07	007	29223	13.0	0.27		0.52				
07	007	29224	14.0	0.31		1.21 J			<100	
07	007	29227	15.0	0.05		1.29 J				
07	007	29228	16.0	0.25		1.01			<100	
07	007	29229	17.0	0.34		1.04				
07	007	29230	18.0	NS		NS			<100	
07	007	29231	19.0	0.29		0.64				
07	007	29232	20.0	0.33		0.50			<100	
07	007	29237	21.0	0.145	0.229	0.171	0.0026 U	0.0026 U	1.2 J	0.074 J
07	007	29238	23.0	0.28		1.32				
07	007	29241	24.0	0.25		0.52 J			<100	
07	007	29242	25.0	0.19		0.72 UJ				
07	007	29243	26.0	0.15		0.38			<100	
07	007	29244	27.0	0.28		1.79 J				
07	007	29245	28.0	0.24		1.68			<100	
07	007	29246	29.0	0.34		1.17 J				
07	007	29247	30.0	0.161	0.167	0.158	0.0026 U	0.0026 U	0.98 J	0.081 J
07	012	29784	0.0	0.52		3.12			<100	
07	012	29785	2.0	0.81		6.04			<100	
07	012	29786	3.0	0.30		1.72				
07	012	29787	4.0	0.50		1.30 J			<100	
07	012	29789	5.0	0.54		2.93 J				
07	012	29790	6.0	0.87		1.21 J			<100	
07	012	29791	7.0	0.181	0.223	0.013	0.0025 U	0.0025 UJ	1.5 J	0.14 J
07	012	29794	9.0	0.43		0.65				
07	012	29795	10.0	0.76		3.68			<100	
07	012	29799	11.0	0.46		0.88 J				
07	012	29800	12.0	1.12		2.19 J			<100	
07	012	29801	13.0	0.34		0.61 J				
07	012	29802	14.0	0.31		0.51			<100	
07	012	29803	15.0	0.24		0.59 J				
07	012	29804	16.0	0.27		1.30			<100	
07	012	29814	17.0	0.121	0.153	0.107	0.0025 U	0.0025 UJ	1.1 J	0.14 J
07	012	29815	20.0	0.33		0.51			<100	
07	012	29818	21.0	0.32		1.81				
07	012	29819	22.0	0.39		1.36 J			<100	
07	012	29820	23.0	0.33		0.99 J				
07	012	29821	24.0	0.06		0.48			<100	
07	012	29822	25.0	0.33		0.36				
07	012	29823	26.0	0.20		1.18 J			<100	
07	012	29833	27.0	0.179	0.155	0.176	0.0025 U	0.0025 UJ	1.2 J	0.16 J
07	012	29834	29.0	0.25		1.70 J				
07	012	29835	30.0	0.246	0.158	0.145	0.0025 U	0.0025 UJ	4.6	0.31 J
07	013	29710	0.0	0.66		13.70				
07	013	29711	1.0	0.73		5.36			<100	
07	013	29715	2.0	0.56		6.38				

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	013	29716	3.0	0.57		1.85			<100	
07	013	29717	4.0	0.57	3.04	2.70	0.0025 U	0.0025 UJ	3.4 J	0.21 J
07	013	29724	6.0	0.66		1.49				
07	013	29725	7.0	1.32		3.30			<100	
07	013	29726	8.0	0.95		2.64				
07	013	29727	9.0	0.47		1.25 J			<100	
07	013	29728	11.0	0.46		1.78 J			<100	
07	013	29729	12.0	0.36		1.90				
07	013	29730	13.0	0.39		0.50			<100	
07	013	29732	14.0	0.221	0.271	0.288	0.0025 U	0.0025 UJ	2.1 J	0.24 J
07	013	29733	16.0	0.35		2.06				
07	013	29734	17.0	0.29		1.16			<100	
07	013	29738	18.0	0.24		0.93 J				
07	013	29739	19.0	0.29		0.74 J			<100	
07	013	29740	20.0	0.31		0.70 J				
07	013	29741	21.0	0.27		1.48			<100	
07	013	29744	22.0	0.32		0.93 J				
07	013	29745	23.0	0.34		1.86			<100	
07	013	29746	24.0	0.215	0.209	0.165	0.0025 U	0.0025 UJ	0.70 J	0.10 J
07	013	29750	26.0	0.19		0.92				
07	013	29751	27.0	0.25		4.00			<100	
07	013	29752	28.0	0.30		1.43				
07	013	29753	29.0	0.17		0.56 J			<100	
07	013	29754	30.0	0.177	0.109	0.013	0.0025 U	0.0025 UJ	1.6 J	0.16 J
07	014	29345	0.0	0.36		1.26			<100	
07	014	29346	1.0	0.432	26.8	26.6	0.0025 U	0.0025 UJ	5.3	0.19 J
07	014	29347	3.0	1.08 J		6.21				
07	014	29348	4.0	0.44		9.37			<100	
07	014	29349	5.0	0.56 J		5.78				
07	014	29350	6.0	0.50		0.73 J			<100	
07	014	29351	7.0	0.34 J		1.57				
07	014	29352	8.0	0.09 UJ		0.68 J			<100	
07	014	29353	9.0	0.08 UJ		0.44				
07	014	29354	10.0	0.06 UJ		0.88 J			<100	
07	014	29355	11.0	0.153	0.340	0.300	0.0025 U	0.0025 UJ	2.3 J	0.11 J
07	014	29356	13.0	0.33 J		0.55				
07	014	29357	14.0	0.34 J		1.78			<100	
07	014	29358	15.0	0.23 J		0.91 J				
07	014	29359	16.0	0.22 J		0.57			<100	
07	014	29360	17.0	0.27		1.32				
07	014	29361	18.0	0.23 J		0.88 J			<100	
07	014	29362	20.0	0.22 J		1.01			<100	
07	014	29363	21.0	0.110	0.190	0.184	0.0025 U	0.0025 UJ	1.0 J	0.51 U
07	014	29364	23.0	0.38 J		0.57				
07	014	29365	24.0	0.29 J		1.59 J			<100	
07	014	29366	25.0	0.25 J		2.46 J				
07	014	29373	26.0	0.26		1.35 J			<100	
07	014	29374	27.0	0.14		0.27				
07	014	29378	28.0	NS		NS			<100	
07	014	29379	29.0	0.22		1.18 J				
07	014	29380	30.0	0.165	0.155	0.139	0.0026 U	0.0026 UJ	2.4 J	0.17 J

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	015	29111	0.0	0.49		2.83 J			<100	
07	015	29115	1.0	1.13		24.47 J				
07	015	29116	2.0	0.62		5.11 J			45.8	
07	015	29117	3.0	0.55 J		1.29 J				
07	015	29118	4.0	0.35 J		5.99 J			<100	
07	015	29121	5.0	0.39		1.60 J				
07	015	29122	6.0	0.40		3.09 J			<100	
07	015	29127	7.0	0.392	0.297	0.219	0.0025 U	0.0025 U	1.9 J	0.13 J
07	015	29130	9.0	0.28 J		1.13 J				
07	015	29131	10.0	0.02		1.09 UJ			<100	
07	015	29133	11.0	0.31		0.38 J				
07	015	29134	12.0	0.28		1.46 J			<100	
07	015	29140	13.0	0.30		0.64 J				
07	015	29141	14.0	0.25		0.76 J			<100	
07	015	29142	15.0	0.23		0.52 UJ				
07	015	29143	16.0	0.27		0.94 J			<100	
07	015	29144	17.0	0.125	0.137	0.165	0.0025 U	0.0025 U	1.0 J	0.075 J
07	015	29150	19.0	0.25		1.21 J				
07	015	29151	20.0	0.30		1.68 J			42.3 J	
07	015	29152	21.0	0.21		1.10 J				
07	015	29153	22.0	0.27		0.69 J			<100	
07	015	29156	23.0	0.25 J		1.07 J				
07	015	29157	24.0	0.29		0.79 J			<100	
07	015	29160	25.0	0.28		2.43 J				
07	015	29161	26.0	0.26 J		1.59 J			<100	
07	015	29162	27.0	0.226	0.170	0.110	0.0026 U	0.0026 U	1.7 J	0.11 J
07	015	29163	29.0	0.03		0.87 J				
07	015	29165	30.0	0.129	0.167	0.132	0.0026 U	0.0026 U	<100	
07	016	29026	0.0	0.63		8.31 J				
07	016	29027	1.0	1.10		4.49			43.5 J	
07	016	29028	2.0	0.86		4.20				
07	016	29029	3.0	0.52		1.65 J			<100	
07	016	29030	4.0	0.368	0.427	0.412	0.0025 U	0.0025 UJ	1.7 J	0.16 J
07	016	29031	6.0	0.53		0.39 UJ				
07	016	29032	7.0	0.44		0.89 J			<100	
07	016	29033	8.0	0.52		1.28 J				
07	016	29034	9.0	0.07		1.18 J			<100	
07	016	29035	10.0	0.40		2.31 J				
07	016	29036	11.0	0.24		1.04 J			<100	
07	016	29037	12.0	0.85		3.04 J				
07	016	29038	13.0	0.21		0.65 J			<100	
07	016	29039	14.0	0.73	0.270	0.258	0.0026 U	0.0026 UJ	0.68 J	0.12 J
07	016	29040	16.0	0.28		0.79 J				
07	016	29041	17.0	0.18		1.14 J			<100	
07	016	29042	18.0	0.25		1.89				
07	016	29043	19.0	0.21		1.74			<100	
07	016	29044	21.0	0.19		1.18 J			<100	
07	016	29045	22.0	0.35		0.34				
07	016	29046	23.0	0.29		0.89 J			<100	
07	016	29047	24.0	0.112	0.173	0.111	0.0026 U	0.0026 UJ	0.65 J	0.069 J
07	016	29050	26.0	0.20		1.16				

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	016	29051	27.0	0.26		1.27 J			<100	
07	016	29055	28.0	0.27		0.93 J				
07	016	29056	29.0	0.24		1.68			<100	
07	016	29057	30.0	0.145	0.096 J	0.099 J	0.0026 U	0.0026 UJ	1.1 J	0.18 J
07	017	28745	0.0	0.59		11.31 J				
07	017	28746	1.0	0.76	24.1	11.6	0.0027 U	0.0091	58.1	1.2 J
07	017	28747	4.0	0.77		14.33 J			<100	
07	017	28748	6.0	0.60		4.45 J			<100	
07	017	28753	8.0	0.11		0.77 UJ			<100	
07	017	28754	10.0	0.20		0.58 J			<100	
07	017	28763	11.0	0.209	0.398	0.302	0.0025 U	0.0025 U	1.6 J	0.20 J
07	017	28764	14.0	0.40 J		1.48			<100	
07	017	28765	15.0	0.33		1.30 J				
07	017	28766	16.0	0.24 J		0.38			<100	
07	017	28767	17.0	0.19		1.77				
07	017	28768	18.0	0.30 J		1.23 J			<100	
07	017	28771	20.0	0.28		0.74 J			<100	
07	017	28772	21.0	0.233	0.152 J	0.145 J	0.0026 U	0.0026 U	1.6 J	0.17 J
07	017	28778	23.0	0.25 J		0.91 J				
07	017	28779	24.0	0.23		0.53 J			<100	
07	017	28780	25.0	0.19 J		0.48 J				
07	017	28781	26.0	NS		NS			<100	
07	017	28782	27.0	0.23		1.33				
07	017	28787	28.0	NS		NS			<100	
07	017	28788	29.0	0.26		0.57 J				
07	017	28793	30.0	0.129	0.119	0.099 J	0.0026 U	0.0026 U	2.4 J	0.17 J
07	018	28447	0.0	0.88		11.62 J			<100	
07	018	28448	2.0	0.51		1.84 J			<100	
07	018	28450	3.0	0.70		2.31				
07	018	28451	4.0	0.37		0.61			<100	
07	018	28457	5.0	0.68		1.33 J				
07	018	28458	6.0	0.76		1.26 J			<100	
07	018	28456	7.0	0.297	0.288	0.293	0.0025 U	0.0025 U	1.8 J	0.19 J
07	018	28463	10.0	0.05 UJ		1.20 J			<100	
07	018	28469	11.0	0.32		1.15				
07	018	28470	12.0	0.07 UJ		1.71 J			<100	
07	018	28471	13.0	0.28 J		1.26				
07	018	28472	14.0	0.30		1.22 J			<100	
07	018	28473	15.0	0.02 UJ		1.71 J				
07	018	28474	16.0	0.30 J		0.33			<100	
07	018	28475	17.0	0.219	0.169	0.230	0.0026 U	0.0026 U	4.1 J	0.17 J
07	018	28476	22.0	0.33		0.70 J			<100	
07	018	28477	23.0	0.32 J		1.41 J				
07	018	28478	24.0	0.29 J		0.76 J			<100	
07	018	28479	25.0	0.06 UJ		1.32 J				
07	018	28480	26.0	0.22 J		0.52 J			<100	
07	018	28487	27.0	0.174	0.140	0.142	0.0025 U	0.0025 U	1.0 J	0.076 J
07	018	28488	29.0	0.22		1.23				
07	018	28489	30.0	0.223	0.201	0.182	0.0026 U	0.0026 U	1.3 J	0.11 J
07	022	29657	0.0	NS		NS			<100	
07	022	29656	1.0	0.56	9.5	9.3	0.0025 U	0.0025 UJ	9.9	0.42 J

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	022	29664	3.0	0.83		1.49 J				
07	022	29665	4.0	1.04		2.69 J			<100	
07	022	29666	5.0	0.39		1.03 J				
07	022	29667	6.0	0.33		1.40 J			<100	
07	022	29671	7.0	0.42		0.89 J				
07	022	29672	8.0	0.71		1.30 J			<100	
07	022	29673	10.0	0.25		1.27 J			<100	
07	022	29677	11.0	0.206	0.245	0.246	0.0025 U	0.0025 U	1.3 J	0.13 J
07	022	29678	13.0	0.03		0.70				
07	022	29679	14.0	0.43		0.98 J			<100	
07	022	29680	15.0	0.31		1.50				
07	022	29681	16.0	0.31		0.61			<100	
07	022	29687	17.0	0.26		1.90				
07	022	29688	18.0	0.38		0.78			<100	
07	022	29689	20.0	0.23		0.47			<100	
07	022	29692	21.0	0.169	0.345	0.262	0.0025 U	0.0025 UJ	1.5 J	0.15 J
07	022	29693	24.0	0.30		0.43			<100	
07	022	29694	25.0	0.22		1.09				
07	022	29698	26.0	0.22		0.61 J			<100	
07	022	29699	27.0	0.31		1.56				
07	022	29700	28.0	0.21		1.48			<100	
07	022	29701	29.0	0.19		0.78 J				
07	022	29702	30.0	0.132	0.206	0.173	0.0025 U	0.0025 UJ	1.7 J	0.17 J
07	023	29570	0.0	0.57		2.14			<100	
07	023	29571	1.0	0.57		1.21 J				
07	023	29572	2.0	0.36		1.73			<100	
07	023	29573	3.0	0.36		1.45				
07	023	29574	4.0	0.42		1.73 J			<100	
07	023	29575	5.0	0.77		2.07 J				
07	023	29576	6.0	0.51		1.29 J			<100	
07	023	29577	7.0	0.195	0.229	0.189	0.0025 U	0.0025 UJ	1.3 J	0.12 J
07	023	29578	9.0	0.42		2.01 J				
07	023	29579	10.0	0.18		0.99			<100	
07	023	29580	11.0	0.33		0.43 J				
07	023	29581	12.0	0.25		1.17 J			<100	
07	023	29582	13.0	0.49		1.55				
07	023	29583	14.0	0.24		0.32			<100	
07	023	29584	15.0	0.19		0.54				
07	023	29585	16.0	0.31		0.63 J			<100	
07	023	29586	17.0	0.153	0.217	0.131	0.0025 U	0.0025 UJ	0.97 J	0.12 J
07	023	29587	19.0	0.19		0.61 J				
07	023	29588	20.0	0.42		0.67			<100	
07	023	29593	21.0	0.23		1.33 J				
07	023	29594	22.0	0.27		0.75 J			<100	
07	023	29595	23.0	0.51		3.22				
07	023	29596	24.0	0.24		1.08 J			<100	
07	023	29597	25.0	0.25		0.47				
07	023	29598	26.0	0.22		0.67 J			<100	
07	023	29599	27.0	0.226	0.206	0.179	0.0025 U	0.0025 UJ	2.0 J	0.28 J
07	023	29600	29.0	0.22		0.97				
07	023	29601	30.0	0.172	0.216	0.166	0.0026 U	0.0026 UJ	1.9 J	0.18 J

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	024	29401	0.0	0.50		9.08				
07	024	29402	1.0	0.52		1.09 J			<100	
07	024	29403	4.0	0.38	0.48	0.53	0.0025 U	0.0025 UJ	1.2 J	0.18 J
07	024	29404	6.0	0.31		1.64				
07	024	29405	7.0	0.46		0.96 J			<100	
07	024	29406	9.0	0.35		1.14 J			<100	
07	024	29407	10.0	0.23		1.21 J				
07	024	29408	11.0	0.07		1.25 J			<100	
07	024	29409	12.0	0.06		0.77 J				
07	024	29410	13.0	0.08		2.20			<100	
07	024	29416	14.0	0.178	0.251	0.225	0.0025 U	0.0025 UJ	1.8 J	0.19 J
07	024	29421	16.0	0.06		1.20 J				
07	024	29422	17.0	0.25		1.40			<100	
07	024	29423	19.0	0.26		0.97 J			<100	
07	024	29424	20.0	0.18		0.63 J				
07	024	29425	21.0	0.21		0.53 J			<100	
07	024	29429	23.0	0.39		1.96			<100	
07	024	29430	24.0	0.164	0.202	0.168	0.0025 U	0.0025 UJ	1.3 J	0.12 J
07	024	29431	26.0	0.05		1.10 J				
07	024	29432	27.0	0.19		0.71 J			<100	
07	024	29440	28.0	0.25		1.20 J				
07	024	29441	29.0	0.20		0.56 J			<100	
07	024	29442	30.0	0.155	0.190	0.161	0.0025 U	0.0025 UJ	0.62 J	0.10 J
07	025	29066	0.0	0.68		8.35			<100	
07	025	29067	1.0	0.85	2.69	2.63	0.0025 U	0.0025 U	6.4	0.35 J
07	025	29068	3.0	0.46		0.49 J				
07	025	29069	4.0	0.47		1.57 J			<100	
07	025	29076	5.0	0.58		0.85 J				
07	025	29077	6.0	0.63		0.62			<100	
07	025	29079	7.0	0.53		0.89 J				
07	025	29080	8.0	0.57		1.56 J			<100	
07	025	29084	10.0	0.34		0.47			<100	
07	025	29085	11.0	0.373	0.390	0.322	0.0025 U	0.0025 U	0.60 J	0.10 J
07	025	29086	13.0	0.25		0.56 J				
07	025	29087	14.0	0.34		1.62			<100	
07	025	29088	15.0	0.23 J		1.07				
07	025	29089	16.0	0.32		0.31			<100	
07	025	29097	17.0	0.21		1.71				
07	025	29098	18.0	0.39		0.49 J			<100	
07	025	29095	19.0	0.42		0.41 J				
07	025	29096	20.0	0.27		1.03 J			<100	
07	025	29099	21.0	0.185	0.216	0.179	0.0025 U	0.0025 U	1.6 J	0.10 J
07	025	29100	23.0	0.30		1.50				
07	025	29101	24.0	0.20		0.38			<100	
07	025	29102	25.0	0.26		0.84 J				
07	025	29103	26.0	0.27		1.05 J			<100	
07	025	29104	27.0	0.21		0.43				
07	025	29105	28.0	0.27		2.81			<100	
07	025	29106	29.0	0.23		0.63				
07	025	29107	30.0	0.120 J	0.201	0.213	0.0026 U	0.0026 U	2.1 J	0.16 J
07	026	28830	0.0	0.95		0.98 J			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	026	28831	1.0	1.33 J		4.95				
07	026	28832	2.0	1.27		0.78			<100	
07	026	28833	3.0	0.62		3.05				
07	026	28834	4.0	0.39		0.77 J			<100	
07	026	28842	5.0	0.61		2.35				
07	026	28843	6.0	0.63 J		0.97 J			<100	
07	026	28844	7.0	0.365	0.236	0.256	0.0025 U	0.0025 U	0.91 J	0.069 J
07	026	28845	9.0	0.61		0.47 J				
07	026	28846	10.0	0.03 UJ		1.16 J			<100	
07	026	28851	11.0	0.26		1.35 J				
07	026	28852	12.0	0.44		1.77			<100	
07	026	28853	13.0	0.46		1.44 J				
07	026	28854	14.0	0.33 J		1.33			<100	
07	026	28857	16.0	0.29		0.88 J			<100	
07	026	28858	17.0	0.104	0.114	0.125	0.0025 U	0.0025 U	1.0 J	0.077 J
07	026	28859	20.0	0.28 J		1.00 J			<100	
07	026	28864	21.0	0.31		0.39				
07	026	28865	22.0	0.25 J		0.57 J			<100	
07	026	28866	23.0	0.30		1.25 J				
07	026	28867	24.0	0.26		1.55			<100	
07	026	28868	25.0	0.29		1.43				
07	026	28869	26.0	0.27		0.42			<100	
07	026	28875	27.0	0.131	0.114	0.092 J	0.0025 U	0.0025 U	1.1 J	0.14 J
07	026	28876	29.0	0.23		1.17 J				
07	026	28877	30.0	0.115	0.129	0.087 J	0.0025 U	0.0025 U	1.7 J	0.092 J
07	027	28506	0.0	0.84 J		0.88 J				
07	027	28507	1.0	0.97		3.57			<100	
07	027	28514	2.0	0.48 J		0.88 J				
07	027	28515	3.0	0.62		1.52 J			<100	
07	027	28517	4.0	0.52	0.97	0.294	0.0025 U	0.0025 U	1.7 J	0.13 J
07	027	28518	6.0	0.63 J		1.11 J				
07	027	28519	7.0	0.77 J		0.87 J			<100	
07	027	28520	9.0	0.05		1.46			<100	
07	027	28521	10.0	0.44 J		0.54				
07	027	28522	11.0	0.07 UJ		1.45			<100	
07	027	28523	12.0	0.37		1.96				
07	027	28524	13.0	0.36 J		1.35 J			<100	
07	027	28525	14.0	0.270	0.257	0.209	0.0025 U	0.0025 U	1.4 J	0.15 J
07	027	28526	16.0	0.07 UJ		0.59 J				
07	027	28527	17.0	0.06		0.69 J			<100	
07	027	28528	18.0	0.28 J		3.53				
07	027	28529	19.0	0.30 J		1.49 J			<100	
07	027	28530	20.0	0.33		2.41				
07	027	28531	21.0	0.25 J		0.86 J			<100	
07	027	28532	22.0	0.36 J		0.96 J				
07	027	28533	23.0	0.34		0.32			<100	
07	027	28538	24.0	0.227	0.124	0.170	0.0025 U	0.0025 U	0.79 J	0.10 J
07	027	28541	26.0	0.20		0.45				
07	027	28542	27.0	0.27		1.82 J			<100	
07	027	28549	29.0	0.06		0.82 J			<100	
07	027	28551	30.0	0.244	0.194	0.145	0.0025 U	0.0025 U	0.63 J	0.14 J

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	031	29618	1.0	0.71		33.77			<100	
07	031	29619	3.0	0.39		6.77			<100	
07	031	29620	4.0	0.455	0.411	0.397	0.0025 U	0.0025 UJ	3.0 J	0.15 J
07	031	29628	6.0	0.63		1.47 J				
07	031	29629	7.0	0.26		1.47 J			<100	
07	031	29630	8.0	0.26		0.89 J				
07	031	29631	9.0	0.35		0.65			<100	
07	031	29632	10.0	0.27		0.59				
07	031	29633	11.0	0.07		2.58 J			<100	
07	031	29634	12.0	0.32		1.56 J				
07	031	29635	13.0	0.42		2.04			<100	
07	031	29636	14.0	0.218	0.248	0.178	0.0025 U	0.0025 UJ	1.4 J	0.20 J
07	031	29638	16.0	0.31		1.61 J				
07	031	29639	17.0	0.28		0.54			<100	
07	031	29637	19.0	0.27		1.20 J			<100	
07	031	29640	20.0	0.20		1.80				
07	031	29641	21.0	0.26		0.76 J			<100	
07	031	29642	23.0	0.48		1.79			<100	
07	031	29649	24.0	0.152	0.167	0.139	0.0025 U	0.0025 UJ	1.1 J	0.16 J
07	031	29650	26.0	0.18		0.32 J				
07	031	29651	27.0	0.27		0.34			<100	
07	031	29652	28.0	0.29		1.43				
07	031	29653	29.0	0.22		0.50			<100	
07	031	29654	30.0	0.130	0.143	0.136	0.0025 U	0.0025 UJ	1.8 J	0.19 J
07	032	29544	0.0	0.74		25.02			<100	
07	032	29545	1.0	0.69	18.5	18.9	0.0027 U	0.0027 UJ	23.9	0.37 J
07	032	29546	4.0	1.20		2.20 J			<100	
07	032	29547	5.0	1.21		1.81 J				
07	032	29548	6.0	0.92		2.52 J			<100	
07	032	29549	7.0	0.55		2.13				
07	032	29550	8.0	0.31		1.86			<100	
07	032	29551	9.0	0.42		1.05 J				
07	032	29552	10.0	0.31		1.74			<100	
07	032	29553	11.0	0.252	0.423	0.386	0.0026 U	0.0026 UJ	2.2 J	0.15 J
07	032	29554	13.0	0.41		1.66				
07	032	29555	14.0	0.27		0.56 J			<100	
07	032	29556	15.0	0.29		0.94 J				
07	032	29557	16.0	0.23		2.03			<100	
07	032	29558	18.0	0.06		0.61 J			<100	
07	032	29559	19.0	0.29		2.61				
07	032	29560	20.0	0.40		0.95 J			<100	
07	032	29561	21.0	0.167	0.201	0.178	0.0025 U	0.0025 UJ	1.3 J	0.17 J
07	032	29562	23.0	0.23		2.20				
07	032	29563	24.0	0.22		1.00			<100	
07	032	29564	25.0	0.25		1.14				
07	032	29565	26.0	0.25		1.33			<100	
07	032	29566	27.0	0.31		0.73 J				
07	032	29567	28.0	0.28		2.21 J			<100	
07	032	29568	29.0	0.26		0.95 J				
07	032	29569	30.0	0.126	0.184	0.166	0.0025 U	0.0025 UJ	1.7 J	0.18 J
07	033	29483	0.0	0.51		3.57			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	033	29485	1.0	0.74		6.62				
07	033	29486	2.0	1.31		4.65			<100	
07	033	29491	3.0	0.70		2.19				
07	033	29492	4.0	0.39		0.86 J			<100	
07	033	29494	5.0	0.45		1.19 J				
07	033	29493	6.0	0.51		0.98 J			<100	
07	033	29500	7.0	0.52	0.38	0.282	0.0026 U	0.0026 UJ	1.2 J	0.16 J
07	033	29503	10.0	0.34		1.35			<100	
07	033	29506	11.0	0.29		0.98 J				
07	033	29507	12.0	0.40		1.55 J			<100	
07	033	29513	13.0	0.43		0.57				
07	033	29514	14.0	0.37		1.48 J			<100	
07	033	29515	16.0	0.27		1.53 J			<100	
07	033	29516	17.0	0.184	0.117	0.178	0.0025 U	0.0025 UJ	0.80 J	0.15 J
07	033	29517	19.0	0.29		0.74				
07	033	29518	20.0	0.35		0.93 J			<100	
07	033	29519	21.0	0.24		2.01				
07	033	29520	22.0	0.30		1.02 J			<100	
07	033	29524	23.0	0.23		1.40 J				
07	033	29525	24.0	0.27		0.74 J			<100	
07	033	29529	25.0	0.19		1.74				
07	033	29530	26.0	0.18		0.78 J			<100	
07	033	29531	27.0	0.157	0.151	0.156	0.0025 U	0.0025 UJ	1.1 J	0.13 J
07	033	29532	29.0	0.19		2.19				
07	033	29533	30.0	0.097 J	0.116	0.130	0.0025 U	0.0025 UJ	1.4 J	0.17 J
07	034	28961	0.0	1.00		1.32 J				
07	034	28962	1.0	0.66		0.63 J			<100	
07	034	28963	2.0	0.37		0.58 J				
07	034	28964	3.0	0.64		0.64 UJ			<100	
07	034	28969	4.0	0.57	0.386	0.322	0.0026 U	0.0026 U	2.1 J	0.21 J
07	034	28971	6.0	0.76		1.07 J				
07	034	28972	7.0	0.44		0.70 J			<100	
07	034	28973	8.0	0.22		1.78 J				
07	034	28974	9.0	0.30		1.46 J			<100	
07	034	28975	10.0	0.39		2.38 J				
07	034	28976	11.0	0.38		2.02 J			<100	
07	034	28977	12.0	0.37		0.57 J				
07	034	28978	13.0	0.26		0.60 J			<100	
07	034	28979	14.0	0.298	0.228	0.234	0.0025 U	0.0025 UJ	1.7 J	0.13 J
07	034	28983	16.0	0.20		0.36 UJ				
07	034	28984	17.0	0.04		0.54 J			<100	
07	034	28985	18.0	0.24		0.51 UJ				
07	034	28986	19.0	0.24		0.86 J			<100	
07	034	28991	20.0	0.25		1.15 J				
07	034	28992	21.0	0.33		0.69 UJ			<100	
07	034	28993	23.0	0.41		0.73 J			<100	
07	034	28994	24.0	0.346	0.234	0.238	0.0026 U	0.0026 UJ	0.36 J	0.082 J
07	034	28995	26.0	0.22		0.90 J				
07	034	28996	27.0	0.20		1.07 J			<100	
07	034	28999	28.0	0.06		2.38 J				
07	034	29000	29.0	0.25		1.65 J			<100	

Table 1
SU06 and SU07 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	034	29004	30.0	0.220	0.165	0.160	0.0025 U	0.0025 UJ	1.4 J	0.15 J
07	035	28901	0.0	0.71		6.13			<100	
07	035	28902	1.0	0.93	32.4	10.3	0.0016 J	0.022	15.1	0.37 J
07	035	28903	4.0	0.77		6.75			<100	
07	035	28909	5.0	0.69		4.64				
07	035	28910	6.0	0.63		3.41			<100	
07	035	28911	7.0	0.87		1.75 J				
07	035	28912	8.0	0.42		1.81			<100	
07	035	28914	9.0	0.49		0.64 J				
07	035	28915	10.0	0.24		1.22 J			<100	
07	035	28916	11.0	0.294	0.307	0.337	0.0025 U	0.0025 U	1.8 J	0.096 J
07	035	28917	13.0	0.35		2.42				
07	035	28918	14.0	0.34		1.06 J			<100	
07	035	28919	15.0	0.29		3.04				
07	035	28920	16.0	0.04		0.52 J			<100	
07	035	28921	17.0	0.14		0.87 J				
07	035	28922	18.0	0.28		1.25 J			<100	
07	035	28927	19.0	0.05		2.76				
07	035	28928	20.0	0.17		0.35 J			<100	
07	035	28929	21.0	0.131	0.166	0.220	0.0026 U	0.0026 U	0.95 J	0.11 J
07	035	28930	23.0	0.31		1.22				
07	035	28933	24.0	0.25		0.54 J			<100	
07	035	28934	25.0	0.33		0.50 J				
07	035	28935	26.0	0.05		0.52				
07	035	28936	27.0	0.34		1.24			<100	
07	035	28942	28.0	0.17		0.88 J			<100	
07	035	28943	29.0	0.19		1.27				
07	035	28944	30.0	0.282	0.206	0.262	0.0026 U	0.0026 U	1.3 J	0.17 J

Table 1
SU06 and SU07 Soil Boring Sample Results

Analytes:

Th-232 - Thorium-232	PCE - Tetrachloroethene
U-234 - Uranium-234	Ni - Nickel
U-238 - Uranium-238	Be - Beryllium
TCE - Trichloroethene	

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 1 for boring locations.

DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.

DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection limit of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).

SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.

NS - Not sampled due to insufficient recovery.

Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.

Blank cell indicates analysis was not performed.

Table 2
 SU06 and SU07 Soil Boring Sample Results
 Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	-234 (pCi/g)	-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	001	28342	4.0	0.38	1.08	0.77	0.0025	0.0025	2.1 J	0.13 J
06	001	28359	14.0	0.191	0.187	0.223	0.0025	0.0025	2.8 J	0.14 J
06	001	28371	24.0	0.160	0.200	0.130	0.0025	0.0025	1.1 J	0.098 J
06	001	28384	30.0	0.120	0.127	0.134	0.0026	0.0026	3.1 J	0.15 J
06	002	27977	1.0	0.474	2.44	1.19	0.0025	0.0025	3.7 J	0.26 J
06	002	28008	11.0	0.417	0.317	0.329	0.0025	0.0025	1.7 J	0.18 J
06	002	28017	21.0	0.141	0.184	0.206	0.0026	0.0026	1.3 J	0.19 J
06	002	28040	30.0	0.151	0.088 J	0.167	0.0026	0.0026	2.3 J	0.21 J
06	003	27421	7.0	1.08	0.75	0.76	0.0030	0.0030	6.7	0.50 J
06	003	27436	17.0	0.187	0.204	0.173	0.0025	0.0025	1.6 J	0.13 J
06	003	27453	27.0	0.257	0.266	0.180	0.0026	0.0026	2.9 J	0.21 J
06	003	27457	30.0	0.198	0.140	0.197	0.0026	0.0026	3.5 J	0.32 J
06	004	27318	4.0	0.65	0.69	0.410	0.0025	0.0025	4.8	0.31 J
06	004	27335	14.0	0.261	0.211	0.213	0.0025	0.0025	1.4 J	0.19 J
06	004	27365	24.0	0.187	0.185	0.177	0.0025	0.0025	3.3 J	0.20 J
06	004	27379	30.0	0.121	0.138	0.123 J	0.0025	0.0025	2.9 J	0.38 J
06	005	26851	1.0	0.83	2.37	1.87	0.0027	0.0024 J	6.6	0.18 J
06	005	26873	11.0	0.268	0.241	0.295	0.0025	0.0025	3.1 J	0.20 J
06	005	26899	21.0	0.235	0.220	0.227	0.0025	0.0025	1.9 J	0.17 J
06	005	26909	30.0	0.183	0.154	0.222	0.0025	0.0025	3.0 J	0.25 J
06	006	28398	1.0	0.58	0.50	0.61	0.0025	0.0025	9.8	0.91
06	006	28413	11.0	0.249	0.233	0.244	0.0025	0.0025	1.3 J	0.10 J
06	006	28420	21.0	0.223	0.180	0.170	0.0025	0.0025	1.5 J	0.11 J
06	006	28427	30.0	0	0.148	0.113	0.0025	0.0025	2.4 J	0.17 J
06	007	28107	7.0	0.42	0.42	0.380	0.00071 J	0.0025	1.7 J	0.15 J
06	007	28144	17.0	0.281	23.8	11.2	0.0025	0.0025	1.9 J	0.11 J
06	007	28171	27.0	0.239	29.0	15.0	0.0025	0.0025	2.8 J	0.20 J
06	007	28173	30.0	0.44	20.7	11.5	0.0025	0.0025	2.2 J	0.15 J
06	008	27882	4.0	0.356	1.91	0.83	0.0025	0.00061 J	2.8 J	0.22 J
06	008	27911	14.0	0.147	0.236	0.175	0.0025	0.0025	1.5 J	0.17 J
06	008	27931	24.0	0.259	0.205	0.170	0.0026	0.0026	1.8 J	0.19 J
06	008	27938	30.0	0.139	0.108	0.183	0.0026	0.0026	1.5 J	0.17 J
06	009	27682	1.0	0.97	7.40	6.06	0.0028	0.0071	330	0.41 J
06	009	27705	11.0	0.269	0.311	0.245	0.0025	0.0025	1.8 J	0.18 J
06	009	27720	21.0	0.249	0.174	0.179	0.0026	0.0026	0.98 J	0.13 J
06	009	27743	30.0	0.149	0.149	0.128	0.0025	0.0025	1.7 J	0.13 J
06	010	27593	7.0	0.220	0.294	0.272	0.0026	0.0026	1.4 J	0.14 J
06	010	27609	17.0	0.105	0.134	0.133	0.0026	0.0026	0.89 J	0.092 J
06	010	27635	27.0	0.181	0.159	0.127	0.0026	0.0026 J	1.3 J	0.16 J
06	010	27642	30.0	0.148	0.167	0.145	0.0026	0.0026 J	1.1 J	0.17 J
06	012	28205	4.0	0.79	3.19	2.33	0.0078	0.024	5.6	0.20 J
06	012	28223	14.0	0.172	0.208	0.164	0.0025	0.0025	1.8 J	0.12 J
06	012	28257	24.0	0.178	0.301	0.163	0.0025	0.0025	0.99 J	0.058 J
06	012	28273	30.0	0.089 J	0.185	0.117	0.0025	0.0025	1.9 J	0.12 J
06	013	28278	1.0	0.64	5.19	1.93	0.0077	0.030	7.6 J	0.34 J
06	013	28299	11.0	0.210	0.224	0.215	0.0025	0.0025	1.2 J	0.071 J
06	013	28318	21.0	0.302	0.194	0.138	0.0025	0.0025	2.8 J	0.086 J
06	013	28326	30.0	0.240	0.175	0.166	0.0025	0.0025	3.2 J	0.087 J
06	014	27502	7.0	0.286	0.322	0.231	0.0025	0.0025	1.3 J	0.14 J
06	014	27528	17.0	0.172	0.139	0.147	0.0025	0.0025	1.0 J	0.11 J
06	014	27555	27.0	0.168	0.156	0.167	0.0025	0.0025	1.9 J	0.24 J
06	014	27561	30.0	0.262	0.122	0.141	0.0026	0.0026	1.4 J	0.14 J
06	015	27776	4.0	1.07	4.62	4.89	0.00054 J	0.0018 J	13.1	0.49 J

Table 2
SU06 and SU07 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	-234 (pCi/g)	-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
06	015	27791	14.0	0.259	0.164	0.182	0.0025	0.0025	1.4 J	0.11 J
06	015	27816	24.0	0.167	0.131	0.140	0.0026	0.0026	2.5 J	0.19 J
06	015	27832	30.0	0.196	0.180	0.138	0.0025	0.0025	1.5 J	0.12 J
06	016	27060	1.0	0.72	5.76	5.42	0.0026 J	0.018 J	21.7	0.30 J
06	016	27082	11.0	0.170	0.213	0.235	0.0025	0.0025	2.3 J	0.21 J
06	016	27094	21.0	0.328	0.322	0.329	0.0025	0.0025	0.92 J	0.12 J
06	016	27117	30.0	0.225	0.128	0.145	0.0026	0.0026	1.8 J	0.22 J
07	004	29454	1.0	0.386	0.53	0.47	0.0026	0.0026 J	13.6	0.47 J
07	004	29463	11.0	0.74	0.64	0.46	0.0026	0.0026 J	9.2	0.63
07	004	29474	21.0	0.207 J	0.220	0.154	0.0026	0.0026 J	1.0 J	0.13 J
07	004	29482	30.0	0.125	0.111	0.120	0.0026	0.0026 J	2.2 J	0.16 J
07	005	29306	7.0	0.364	0.322	0.305	0.0025	0.0025	2.3 J	0.16 J
07	005	29320	17.0	0.176	0.157	0.193	0.0026	0.0026	1.8 J	0.048 J
07	005	29334	27.0	0.201	0.162	0.178	0.0026	0.0026	1.1 J	0.084 J
07	005	29341	30.0	0.141	0.225	0.182	0.0026	0.0026	2.1 J	0.23 J
07	006	29256	4.0	0.78	0.62	0.55	0.0025	0.0025	2.0 J	0.12 J
07	006	29269	14.0	0.248	0.296	0.271	0.0026	0.0026	2.3 J	0.084 J
07	006	29283	24.0	0.207	0.318	0.311	0.0026	0.0026	1.1 J	0.079 J
07	006	29288	30.0	0.125	0.133	0.131	0.0026	0.0026	1.7 J	0.13 J
07	007	29209	1.0	0.73	15.3	8.8	0.0028	0.0028	19.3	0.61
07	007	29222	11.0	0.222	0.320	0.299	0.0026	0.0026	3.2 J	0.26 J
07	007	29237	21.0	0.145	0.229	0.171	0.0026	0.0026	1.2 J	0.074 J
07	007	29247	30.0	0.161	0.167	0.158	0.0026	0.0026	0.98 J	0.081 J
07	012	29791	7.0	0.181	0.223	0.013	0.0025	0.0025 J	1.5 J	0.14 J
07	012	29814	17.0	0.121	0.153	0.107	0.0025	0.0025 J	1.1 J	0.14 J
07	012	29833	27.0	0.179	0.155	0.176	0.0025	0.0025 J	1.2 J	0.16 J
07	012	29835	30.0	0.246	0.158	0.145	0.0025	0.0025 J	4.6	0.31 J
07	013	29717	4.0	0.57	3.04	2.70	0.0025	0.0025 J	3.4 J	0.21 J
07	013	29732	14.0	0.221	0.271	0.288	0.0025	0.0025 J	2.1 J	0.24 J
07	013	29746	24.0	0.215	0.209	0.165	0.0025	0.0025 J	0.70 J	0.10 J
07	013	29754	30.0	0.177	0.109	0.013	0.0025	0.0025 J	1.6 J	0.16 J
07	014	29346	1.0	0.432	26.8	26.6	0.0025	0.0025 J	5.3	0.19 J
07	014	29355	11.0	0.153	0.340	0.300	0.0025	0.0025 J	2.3 J	0.11 J
07	014	29363	21.0	0.110	0.190	0.184	0.0025	0.0025 J	1.0 J	1
07	014	29380	30.0	0.165	0.155	0.139	0.0026	0.0026 J	2.4 J	0.17 J
07	015	29127	7.0	0.392	0.297	0.219	0.0025	0.0025	1.9 J	0.13 J
07	015	29144	17.0	0.125	0.137	0.165	0.0025	0.0025	1.0 J	0.075 J
07	015	29162	27.0	0.226	0.170	0.110	0.0026	0.0026	1.7 J	0.11 J
07	015	29165	30.0	0.129	0.167	0.132	0.0026	0.0026		
07	016	29030	4.0	0.368	0.427	0.412	0.0025	0.0025 J	1.7 J	0.16 J
07	016	29039	14.0	0.73	0.270	0.258	0.0026	0.0026 J	0.68 J	0.12 J
07	016	29047	24.0	0.112	0.173	0.111	0.0026	0.0026 J	0.65 J	0.069 J
07	016	29057	30.0	0.145	0.096 J	0.099 J	0.0026	0.0026 J	1.1 J	0.18 J
07	017	28746	1.0	0.76	24.1	11.6	0.0027	0.0091	58.1	1.2 J
07	017	28763	11.0	0.209	0.398	0.302	0.0025	0.0025	1.6 J	0.20 J
07	017	28772	21.0	0.233	0.152 J	0.145 J	0.0026	0.0026	1.6 J	0.17 J
07	017	28793	30.0	0.129	0.119	0.099 J	0.0026	0.0026	2.4 J	0.17 J
07	018	28456	7.0	0.297	0.288	0.293	0.0025	0.0025	1.8 J	0.19 J
07	018	28475	17.0	0.219	0.169	0.230	0.0026	0.0026	4.1 J	0.17 J
07	018	28487	27.0	0.174	0.140	0.142	0.0025	0.0025	1.0 J	0.076 J
07	018	28489	30.0	0.223	0.201	0.182	0.0026	0.0026	1.3 J	0.11 J
07	022	29656	1.0	0.56	9.5	9.3	0.0025	0.0025 J	9.9	0.42 J
07	022	29677	11.0	0.206	0.245	0.246	0.0025	0.0025	1.3 J	0.13 J

Table 2
 SU06 and SU07 Soil Boring Sample Results
 Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	-234 (pCi/g)	-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
07	022	29692	21.0	0.169	0.345	0.262	0.0025	0.0025 J	1.5 J	0.15 J
07	022	29702	30.0	0.132	0.206	0.173	0.0025	0.0025 J	1.7 J	0.17 J
07	023	29577	7.0	0.195	0.229	0.189	0.0025	0.0025 J	1.3 J	0.12 J
07	023	29586	17.0	0.153	0.217	0.131	0.0025	0.0025 J	0.97 J	0.12 J
07	023	29599	27.0	0.226	0.206	0.179	0.0025	0.0025 J	2.0 J	0.28 J
07	023	29601	30.0	0.172	0.216	0.166	0.0026	0.0026 J	1.9 J	0.18 J
07	024	29403	4.0	0.38	0.48	0.53	0.0025	0.0025 J	1.2 J	0.18 J
07	024	29416	14.0	0.178	0.251	0.225	0.0025	0.0025 J	1.8 J	0.19 J
07	024	29430	24.0	0.164	0.202	0.168	0.0025	0.0025 J	1.3 J	0.12 J
07	024	29442	30.0	0.155	0.190	0.161	0.0025	0.0025 J	0.62 J	0.10 J
07	025	29067	1.0	0.85	2.69	2.63	0.0025	0.0025	6.4	0.35 J
07	025	29085	11.0	0.373	0.390	0.322	0.0025	0.0025	0.60 J	0.10 J
07	025	29099	21.0	0.185	0.216	0.179	0.0025	0.0025	1.6 J	0.10 J
07	025	29107	30.0	0.120 J	0.201	0.213	0.0026	0.0026	2.1 J	0.16 J
07	026	28844	7.0	0.365	0.236	0.256	0.0025	0.0025	0.91 J	0.069 J
07	026	28858	17.0	0.104	0.114	0.125	0.0025	0.0025	1.0 J	0.077 J
07	026	28875	27.0	0.131	0.114	0.092 J	0.0025	0.0025	1.1 J	0.14 J
07	026	28877	30.0	0.115	0.129	0.087 J	0.0025	0.0025	1.7 J	0.092 J
07	027	28517	4.0	0.52	0.97	0.294	0.0025	0.0025	1.7 J	0.13 J
07	027	28525	14.0	0.270	0.257	0.209	0.0025	0.0025	1.4 J	0.15 J
07	027	28538	24.0	0.227	0.124	0.170	0.0025	0.0025	0.79 J	0.10 J
07	027	28551	30.0	0.244	0.194	0.145	0.0025	0.0025	0.63 J	0.14 J
07	031	29620	4.0	0.455	0.411	0.397	0.0025	0.0025 J	3.0 J	0.15 J
07	031	29636	14.0	0.218	0.248	0.178	0.0025	0.0025 J	1.4 J	0.20 J
07	031	29649	24.0	0.152	0.167	0.139	0.0025	0.0025 J	1.1 J	0.16 J
07	031	29654	30.0	0.130	0.143	0.136	0.0025	0.0025 J	1.8 J	0.19 J
07	032	29545	1.0	0.69	18.5	18.9	0.0027	0.0027 J	23.9	0.37 J
07	032	29553	11.0	0.252	0.423	0.386	0.0026	0.0026 J	2.2 J	0.15 J
07	032	29561	21.0	0.167	0.201	0.178	0.0025	0.0025 J	1.3 J	0.17 J
07	032	29569	30.0	0.126	0.184	0.166	0.0025	0.0025 J	1.7 J	0.18 J
07	033	29500	7.0	0.52	0.38	0.282	0.0026	0.0026 J	1.2 J	0.16 J
07	033	29516	17.0	0.184	0.117	0.178	0.0025	0.0025 J	0.80 J	0.15 J
07	033	29531	27.0	0.157	0.151	0.156	0.0025	0.0025 J	1.1 J	0.13 J
07	033	29533	31.0	0.097 J	0.116	0.130	0.0025	0.0025 J	1.4 J	0.17 J
07	034	28969	4.0	0.57	0.386	0.322	0.0026	0.0026	2.1 J	0.21 J
07	034	28979	14.0	0.298	0.228	0.234	0.0025	0.0025 J	1.7 J	0.13 J
07	034	28994	24.0	0.346	0.234	0.238	0.0026	0.0026 J	0.36 J	0.082 J
07	034	29004	30.0	0.220	0.165	0.160	0.0025	0.0025 J	1.4 J	0.15 J
07	035	28902	1.0	0.93	32.4	10.3	0.0016 J	0.022	15.1	0.37 J
07	035	28916	11.0	0.294	0.307	0.337	0.0025	0.0025	1.8 J	0.096 J
07	035	28929	21.0	0.131	0.166	0.220	0.0026	0.0026	0.95 J	0.11 J
07	035	28944	30.0	0.282	0.206	0.262	0.0026	0.0026	1.3 J	0.17 J

Table 2
SU06 and SU07 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene

PCE - Tetrachloroethene
Ni - Nickel
Be - Beryllium

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

U - Validation qualifier used to indicate that the result was qualified as non-detect.

J - Validation qualifier used to indicate that the result is considered an estimate.

UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 1 for boring locations.

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
E08	34	01	28631	1.0	0.63		1.01 UJ			<100	
E08	34	01	28632	2.0	0.57		2.21				
E08	34	01	28639	3.0	0.62		4.22			<100	
E08	34	01	28640	4.0	0.63		4.01				
E08	34	01	28645	5.0	0.34		2.61 J			<100	
E08	34	01	28646	6.0	0.42		1.11 J				
E08	34	01	28651	7.0	0.66		2.28 J			<100	
E08	34	01	28663	8.0	0.31		0.50 J				
E08	34	01	28664	9.0	0.33		0.88 J			<100	
E08	34	01	28667	10.0	0.37		1.33 J				
E08	34	01	28682	11.0	0.32		1.08 J			<100	
E08	34	01	28687	12.0	0.29		0.70 J				
E08	34	01	28694	13.0	0.42		1.45 J			<100	
E08	34	01	28695	14.0	0.27		0.62 J				
E08	34	01	28698	15.0	0.22		0.92 J			<100	
E08	34	01	28699	16.0	0.23		1.37				
E08	34	01	28708	17.0	0.20		0.62 J			<100	
E08	34	01	28717	18.0	0.20		4.00 J				
E08	34	01	28723	19.0	0.23		3.97 J			<100	
E08	34	01	28732	20.0	0.23		2.48 J				
E08	34	01	28801	21.0	0.21 J		2.35			<100	
E08	34	01	28802	22.0	0.17 J		2.19				
E08	34	01	28803	23.0	0.23		1.05 J			<100	
E08	34	01	28811	24.0	0.18 J		1.08				
E08	34	01	28823	25.0	0.27		0.59 J			<100	
E08	34	01	28829	26.0	0.47 J		1.04 J				
E08	34	01	28835	27.0	0.24		0.44 J			<100	
E08	34	01	28848	28.0	0.15		0.40				
E08	34	01	28847	29.0	0.25		0.72 J			<100	
E08	34	01	28850	30.0	0.194	0.187	0.179	0.0026 U	0.0026 U	2.3 J	0.17 J
E08	34	04	27455	1.0	0.66		5.13			<100	
E08	34	04	27456	3.0	NS		NS			<100	
E08	34	04	27461	9.0	NS		NS			<100	
E08	34	04	27462	10.0	0.10		5.66	0.0025 U	0.0025 U		
E08	34	04	27463	14.0	0.25		1.11	0.094	0.094		
E08	34	04	27464	15.0	0.31 J		6.70			<100	
E08	34	04	27467	16.0	0.22		5.87	0.113	0.113		
E08	34	04	27468	17.0	0.17		3.94			<100	
E08	34	04	27469	18.0	0.31		6.06	0.112	0.112		
E08	34	04	27470	19.0	0.17		4.17			<100	
E08	34	04	27479	20.0	0.28		5.01	0.0025 U	0.0025 U		
E08	34	04	27480	21.0	0.28		4.41			<100	
E08	34	04	27481	22.0	0.22		3.39	0.111	0.111		
E08	34	04	27482	23.0	0.17		3.06			<100	
E08	34	04	27483	24.0	0.13 J		2.66	0.131	0.131		
E08	34	04	27484	25.0	0.24		3.58			<100	
E08	34	04	27490	26.0	0.19 J		2.74	0.107	0.107		
E08	34	04	27491	27.0	0.16		0.77			<100	
E08	34	04	27492	28.0	0.24		9.45	0.109	0.109		
E08	34	04	27493	29.0	0.24 J		4.01			<100	
E08	34	04	27494	30.0	0.167 J	4.47	4.41	0.0025 U	0.0025 U	0.14 J	5.7
E08	34	04	27506	32.0	0.18		0.84	0.112	0.112		
E08	34	04	27507	33.0	0.19		0.80			<100	

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
E08	34	04	27508	34.0	0.22		2.40	0.109	0.109		
E08	34	04	27509	35.0	0.19		0.67 J			<100	
E08	34	04	27515	36.0	0.04		1.02	0.115	0.115		
E08	34	04	27516	37.0	0.24 J		0.94			<100	
E08	34	04	27517	38.0	0.02 UJ		0.24	0.115	0.115		
E08	34	04	27518	39.0	0.22 J		0.43			<100	
E08	34	04	27519	40.0	0.21 J		0.60 J	0.0026 U	0.0026 U		
E08	34	04	27520	41.0	0.10 J		0.69 J			<100	
E08	34	04	27527	42.0	0.17 J		0.73	0.116	0.116		
E08	34	04	27536	43.0	0.48 J		1.02 J			<100	
E08	34	04	27537	44.0	0.46 J		0.57	0.115	0.115		
E08	34	04	27538	45.0	0.33 J		0.50			<100	
E08	34	04	27539	46.0	0.29 J		0.60 J	0.135	0.135		
E08	34	04	27540	47.0	0.30 J		1.78			<100	
E08	34	04	27541	48.0	1.33 J		2.27	0.098	0.098		
E08	34	04	27542	49.0	1.12 J		3.15			<100	
E08	34	04	27545	50.0	0.82 J		2.22 J	0.0030 U	0.00089 U		
E08	34	04	27546	51.0	0.67 J		2.39 J			<100	
E08	34	04	27547	52.0	0.75 J		1.10 J	0.093	0.093		
E08	34	04	27548	53.0	0.61 J		0.57			<100	
E08	34	04	27551	54.0	0.61 J		1.16 J	0.115	0.115		
E08	34	04	27552	55.0	0.52 J		0.64			<100	
E08	34	04	27553	56.0	0.33 J		1.17 J	0.111	0.111		
E08	34	04	27554	57.0	0.34 J		0.94 J			<100	
E08	34	04	27557	58.0	0.41 J		2.11	0.112	0.112		
E08	34	04	27558	59.0	0.46 J		1.54 J			<100	
E08	34	04	27559	60.0	0.54 J		1.30	0.115	0.115		
E08	34	04	27560	61.0	0.27 J		0.89 J			<100	
E08	34	04	27562	62.0	0.36 J		0.70 J	0.124	0.124		
E08	34	04	27563	63.0	0.32 J		1.89			<100	
E08	34	04	27564	64.0	0.50 J	0.212	0.138	0.0027 U	0.0027 U	0.47 J	0.072 J
E08	34	05	28751	1.0	0.71		5.94 J			<100	
E08	34	05	28752	2.0	0.87		6.99 J				
E08	34	05	28755	3.0	0.80		7.10 J			<100	
E08	34	05	28800	4.0	0.39 J		1.12 J				
E08	34	05	28863	5.0	0.65 J		5.08			<100	
F08	34	03	29838	2.0	0.42		2.79				
F08	34	03	29839	3.0	0.33		1.37 J			<100	
F08	34	03	29840	4.0	0.30		1.17				
F08	34	03	29841	5.0	0.89		1.72 J			<100	
F08	34	03	29844	7.0	0.54		1.69			<100	
F08	34	03	29845	8.0	0.35		0.47				
F08	34	03	29846	9.0	0.33		1.33 J			<100	
F08	34	03	29856	10.0	0.09		1.12 J				
F08	34	03	29857	11.0	0.28		1.52 J			<100	
F08	34	03	29860	12.0	0.34		1.93 J				
F08	34	03	29861	13.0	0.30		0.65 J			<100	
F08	34	03	29863	14.0	0.26		0.27				
F08	34	03	29864	15.0	0.19		0.33			<100	
F08	34	03	29865	16.0	0.33		1.50				
F08	34	03	29866	17.0	0.20		0.90 J			<100	
F08	34	03	29873	18.0	0.29		0.49				
F08	34	03	29874	19.0	0.28		1.50			<100	

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
F08	34	03	29875	20.0	0.46		1.67 J				
F08	34	03	29876	21.0	0.27		0.96 J			<100	
F08	34	03	29879	22.0	0.27		1.29 J				
F08	34	03	29880	23.0	0.28		0.82 J			<100	
F08	34	03	29884	24.0	0.36		1.11 J				
F08	34	03	29885	25.0	0.31		0.53			<100	
F08	34	03	29886	26.0	0.25		0.81 J				
F08	34	03	29887	27.0	0.30		0.93 J			<100	
F08	34	03	29888	28.0	0.22		1.21				
F08	34	03	29889	29.0	0.22		0.48			<100	
F08	34	03	29890	30.0	0.140	0.117	0.084 J	0.0025 U	0.0025 UJ	2.1 J	1.0
I06	21	01	19179	3.0	NS		NS			<100	
I06	21	01	19187	5.0	0.80		6.43			<100	
I06	21	01	19188	7.0	1.23		33.35			<100	
I06	21	01	19197	9.0	0.85		35.34			<100	
I06	21	01	19200	11.0	0.90		39.73			<100	
I06	21	01	19201	12.0	0.65		35.82				
I06	21	01	19202	13.0	1.09		45.44			<100	
I06	21	01	19207	15.0	1.08		46.15			43.3 J	
I06	21	01	19221	16.0	20.5	612	82	1600	40000 J	125 J	0.86 U
I06	21	01	19222	19.0	3.35		11.49	33.412	1344.441 J	<100	
I06	21	01	19227	21.0	0.75		5.69	0.117	0.337	<100	
I06	21	01	19240	22.0	NS		NS	0.113	0.219		
I06	21	01	19239	23.0	0.78		5.27 J			<100	
I06	21	01	19261	25.0	0.50		4.33				
I06	21	01	19265	26.0	0.53		1.15				
I06	21	01	19266	27.0	1.16		16.82 J				
I06	21	01	19278	29.0	0.34		1.17				
I06	21	01	19279	30.0	0.250	7.27	4.74	0.0026 U	0.0026 R	2.4 J	0.51 U
I06	21	02	19588	1.0	0.77		7.18 J			<100	
I06	21	02	19589	2.0	0.84		4.74 J				
I06	21	02	19590	3.0	1.40 J		1.51			<100	
I06	21	02	19599	4.0	0.40		2.50 J				
I06	21	02	19600	5.0	0.37		1.07 J			<100	
I06	21	02	19605	6.0	0.35		0.96 J				
I06	21	02	19606	7.0	0.56		2.35 J			<100	
I06	21	02	19611	8.0	0.77		4.00				
I06	21	02	19612	9.0	0.36		1.22 J			<100	
I06	21	02	19613	10.0	0.29		2.49 J				
I06	21	02	19614	11.0	0.32		1.61 J			<100	
I06	21	02	19616	12.0	0.30 J		2.21				
I06	21	02	19617	13.0	0.43 J		0.80			<100	
I06	21	02	19618	14.0	0.22		7.63 J				
I06	21	02	19619	15.0	0.30		9.07 J			<100	
I06	21	02	19620	16.0	0.22		9.73				
I06	21	02	19621	17.0	0.51 J		14.93			<100	
I06	21	02	19622	18.0	0.41		7.88 J				
I06	21	02	19623	19.0	0.20		8.37 J			<100	
I06	21	02	19624	21.0	0.42		15.16			<100	
I06	21	02	19625	22.0	0.45 J		8.24				
I06	21	02	19626	23.0	0.34		9.36			<100	
I06	21	02	19627	25.0	0.04 UJ		10.85			<100	
I06	21	02	19628	26.0	0.27		11.38				

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I06	21	02	19629	27.0	0.06 UJ		13.78			<100	
I06	21	02	19637	28.0	0.32 J		15.68				
I06	21	02	19638	29.0	0.15		9.09			<100	
I06	21	02	19641	30.0	0.132	6.58	5.97	0.0026 U	0.0026 U	1.6 J	0.089 J
I06	21	03	19315	2.0	1.00		16.87 J				
I06	21	03	19316	3.0	1.15		14.63			<100	
I06	21	03	19335	4.0	0.50		11.59				
I06	21	03	19336	5.0	0.10		11.55			<100	
I06	21	03	19342	6.0	0.33		1.91 J				
I06	21	03	19343	7.0	0.55		2.65			<100	
I06	21	03	19348	9.0	0.90		3.49			<100	
I06	21	03	19354	11.0	0.30		2.96			<100	
I06	21	03	19359	12.0	0.36		4.41				
I06	21	03	19360	13.0	0.30		3.87			<100	
I06	21	03	19365	15.0	1.00		10.93			<100	
I06	21	03	19371	16.0	1.30		11.77				
I06	21	03	19372	17.0	2.44		14.97			<100	
I06	21	03	19379	18.0	1.40		9.13				
I06	21	03	19380	19.0	1.40		3.47			<100	
I06	21	03	19384	20.0	1.36		5.37				
I06	21	03	19385	21.0	0.85		0.97			<100	
I06	21	03	19390	22.0	1.10		10.74				
I06	21	03	19391	23.0	0.99		7.34			<100	
I06	21	03	19407	25.0	0.88		14.70			<100	
I06	21	03	19408	26.0	0.92		17.11				
I06	21	03	19409	27.0	0.98		22.38			<100	
I06	21	03	19420	28.0	0.68		13.89				
I06	21	03	19421	29.0	0.46		17.87			<100	
I06	21	03	19422	30.0	0.63	22.3	13.9	0.0026 U	0.0026 R	2.2 J	0.12 J
I06	21	04	19497	3.0	1.45		9.54			<100	
I06	21	04	19502	5.0	0.53		1.49			<100	
I06	21	04	19503	6.0	0.51		2.75				
I06	21	04	19504	7.0	0.69		6.53			<100	
I06	21	04	19514	9.0	0.34		1.04 J			<100	
I06	21	04	19520	11.0	0.27		3.18			<100	
I06	21	04	19521	12.0	0.20		0.49				
I06	21	04	19522	13.0	0.48		4.07			<100	
I06	21	04	19525	15.0	0.71		3.76			<100	
I06	21	04	19526	16.0	0.78		6.14				
I06	21	04	19529	17.0	1.62		6.44			<100	
I06	21	04	19530	19.0	1.01		6.18			<100	
I06	21	04	19528	21.0	0.72		5.80			<100	
I06	21	04	19531	22.0	0.79		2.49				
I06	21	04	19532	23.0	1.10		3.97			<100	
I06	21	04	19538	25.0	0.99		5.30			<100	
I06	21	04	19539	26.0	1.22 J		3.18				
I06	21	04	19540	27.0	2.77		5.01			<100	
I06	21	04	19541	28.0	1.25		3.96 J				
I06	21	04	19542	29.0	1.12		4.81 J			<100	
I06	21	04	19578	30.0	0.62	13.4	8.07	0.0026 U	0.0026 U	1.3 J	0.51 U
I06	21	05	19692	2.0	1.01		18.35				
I06	21	05	19693	3.0	0.77		9.66			<100	
I06	21	05	19694	4.0	0.76		11.93				

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I06	21	05	19695	5.0	2.97		27.44			<100	
I06	21	05	19696	7.0	2.74		46.94			<100	
I06	21	05	19697	9.0	0.93		15.38			<100	
I06	21	05	19698	10.0	2.33		59.20				
I06	21	05	19699	11.0	3.22		33.89			<100	
I06	21	05	19703	13.0	NS		NS			<100	
I06	21	05	19704	14.0	0.90		3.75				
I06	21	05	19705	15.0	1.58		7.06			<100	
I06	21	05	19706	16.0	1.54		16.18				
I06	21	05	19707	17.0	1.14		9.20			<100	
I06	21	05	19721	18.0	0.86		7.55				
I06	21	05	19722	19.0	1.04		13.45			<100	
I06	21	05	19723	21.0	1.00		6.97			<100	
I06	21	05	19728	22.0	1.04		7.08				
I06	21	05	19729	23.0	1.14		4.02			<100	
I06	21	05	19737	24.0	1.27		3.99				
I06	21	05	19738	25.0	0.98		1.55			<100	
I06	21	05	19747	26.0	1.89		4.04				
I06	21	05	19748	27.0	2.45		3.79			<100	
I06	21	05	19753	28.0	1.33		3.86				
I06	21	05	19754	29.0	1.65		2.33			<100	
I06	21	05	19768	30.0	0.150	0.166	0.147	0.0025 U	0.0025 U	1.8 J	0.51 U
I06	21	06	20602	1.0	0.82		5.64 J			<100	
I06	21	06	20603	2.0	0.93		2.08				
I06	21	06	20604	3.0	1.02		2.43			<100	
I06	21	06	20605	5.0	0.42		14.28			<100	
I06	21	06	20607	6.0	0.37		11.39				
I06	21	06	20608	7.0	0.53		16.60			<100	
I06	21	06	20614	8.0	1.07		13.41				
I06	21	06	20615	9.0	0.50		3.36 J			<100	
I06	21	06	20623	11.0	0.41		1.20 J			<100	
I06	21	06	20624	13.0	0.27		2.84			<100	
I06	21	06	20652	15.0	0.36		1.34 J			<100	
I06	21	06	20653	16.0	0.32		3.17 J				
I06	21	06	20654	17.0	0.34		3.82			<100	
I06	21	06	20661	19.0	0.29		1.27 J			<100	
I06	21	06	20662	21.0	0.27		1.89			<100	
I06	21	06	20678	22.0	0.17		1.09 J				
I06	21	06	20679	23.0	0.25		0.62 J			<100	
I06	21	06	20684	25.0	0.02		0.48 J			<100	
I06	21	06	20685	26.0	0.02		0.79 J				
I06	21	06	20686	27.0	0.23		0.51			<100	
I06	21	06	20689	29.0	0.04		0.36 J			<100	
I06	21	06	20700	30.0	0.137	0.097 J	0.137	0.0025 U	0.0025 U	1.6 J	0.14 J
I06	21	07	20709	1.0	0.60		1.20			<100	
I06	21	07	20711	2.0	1.25		8.38				
I06	21	07	20712	3.0	0.88		3.16			<100	
I06	21	07	20713	5.0	0.41		1.56			<100	
I06	21	07	20719	6.0	0.60		1.93				
I06	21	07	20720	7.0	0.49		1.51			43.1 J	
I06	21	07	20731	9.0	0.77		0.85 J			<100	
I06	21	07	20732	11.0	0.29		2.57			<100	
I06	21	07	20751	13.0	0.05		0.58			<100	

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
106	21	07	20758	15.0	0.27		1.10			<100	
106	21	07	20762	16.0	0.25		0.96 J				
106	21	07	20763	17.0	0.31		0.77 J			<100	
106	21	07	20771	19.0	0.21		1.43			<100	
106	21	07	20772	21.0	0.25		0.60 J			<100	
106	21	07	20780	22.0	0.22		1.42 J				
106	21	07	20781	23.0	0.29		0.90			<100	
106	21	07	20791	25.0	0.24		1.59			<100	
106	21	07	20792	26.0	0.30		3.97				
106	21	07	20793	27.0	0.26		8.07			<100	
106	21	07	20804	29.0	0.27		1.61			<100	
106	21	07	20813	30.0	0.195	6.48 J	7.06 J	0.0025 U	0.0025 U	2.6 J	0.32 J
106	21	08	20400	1.0	0.99		6.81			<100	
106	21	08	20401	3.0	0.98		1.66 J			<100	
106	21	08	20414	5.0	0.54 J		1.08 J			<100	
106	21	08	20427	7.0	0.91		1.42 J			<100	
106	21	08	20428	9.0	0.51		3.55			<100	
106	21	08	20434	11.0	0.35		0.96 J			<100	
106	21	08	20435	12.0	0.29		0.62				
106	21	08	20436	13.0	0.33		0.70 J			<100	
106	21	08	20442	15.0	0.34		1.27 J			<100	
106	21	08	20443	16.0	0.29		1.40				
106	21	08	20444	17.0	0.37		1.58 J			<100	
106	21	08	20448	19.0	0.25		5.96			<100	
106	21	08	20454	21.0	0.31		10.58			<100	
106	21	08	20455	22.0	0.20		5.32				
106	21	08	20456	23.0	0.28		10.16			<100	
106	21	08	20475	25.0	0.07		8.76			42.7 J	
106	21	08	20476	26.0	0.30		7.80				
106	21	08	20477	27.0	0.29		9.51			<100	
106	21	08	20490	29.0	0.23		10.70			<100	
106	21	08	20500	30.0	0.124	6.06	5.91	0.0025 U	0.0025 U	0.85 J	0.049 J
106	21	09	20534	1.0	0.53		2.11			<100	
106	21	09	20535	2.0	1.41		4.63				
106	21	09	20536	3.0	1.45		2.52			<100	
106	21	09	20537	5.0	0.42		0.96 J			41.9 J	
106	21	09	20545	6.0	0.67		1.35 J				
106	21	09	20546	7.0	0.59		3.18			<100	
106	21	09	20553	9.0	1.22		3.04			<100	
106	21	09	20554	11.0	0.26		0.94 J			<100	
106	21	09	20555	12.0	0.41		0.53				
106	21	09	20556	13.0	0.28		0.68 J			55.2 J	
106	21	09	20561	14.0	0.09		1.79				
106	21	09	20562	15.0	0.29		0.71 J			<100	
106	21	09	20563	16.0	0.34		1.09				
106	21	09	20564	17.0	0.35		1.21			<100	
106	21	09	20565	19.0	0.20		1.42 J			<100	
106	21	09	20566	21.0	0.36		2.27			<100	
106	21	09	20569	22.0	0.33		3.48				
106	21	09	20570	23.0	0.31		2.14			<100	
106	21	09	20578	25.0	0.23		1.47			<100	
106	21	09	20587	27.0	0.20		0.24			42.8 J	
106	21	09	20590	29.0	0.28		1.73			<100	

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I06	21	09	20595	30.0	0.120	0.68	0.58	0.0026 U	0.0026 U	1.7 J	0.11 J
I06	21	13	20294	1.0	0.93		8.02			<100	
I06	21	13	20297	2.0	0.93		14.35				
I06	21	13	20298	3.0	0.68		0.70 J			<100	
I06	21	13	20302	4.0	0.38		1.29				
I06	21	13	20303	5.0	0.71 J		1.70 J			<100	
I06	21	13	20304	7.0	0.08		0.69 J			<100	
I06	21	13	20305	8.0	0.90		2.15 J				
I06	21	13	20306	9.0	0.59 J		0.63			<100	
I06	21	13	20307	11.0	0.26		0.82			<100	
I06	21	13	20309	12.0	0.42		0.91 J				
I06	21	13	20310	13.0	0.08 UJ		0.58			<100	
I06	21	13	20337	15.0	0.29 J		2.03			<100	
I06	21	13	20338	16.0	0.50		1.45 J				
I06	21	13	20339	17.0	0.21 J		1.02 J			<100	
I06	21	13	20340	19.0	0.31		1.42			<100	
I06	21	13	20354	21.0	0.28 J		0.95			<100	
I06	21	13	20355	22.0	0.26		1.04				
I06	21	13	20356	23.0	0.33		1.00 J			<100	
I06	21	13	20360	25.0	0.27		1.29 J			<100	
I06	21	13	20369	26.0	0.26 J		1.17 J				
I06	21	13	20370	27.0	0.18		1.84			<100	
I06	21	13	20378	29.0	0.22		1.21			<100	
I06	21	13	20385	30.0	0.144	0.165	0.202	0.0026 U	0.0026 U	3.2 J	0.17 J
L05	20	01	19775	1.0	0.76 J		13.54			332	
L05	20	01	19776	2.0	0.85		0.72				
L05	20	01	19777	3.0	1.32 J		1.38 J			<100	
L05	20	01	19785	4.0	0.52 J		1.38 J				
L05	20	01	19782	5.0	0.37 J		1.37 J			<100	
L05	20	01	19783	6.0	0.42 J		1.76 J				
L05	20	01	19784	7.0	0.60 J		1.66			<100	
L05	20	01	19797	9.0	0.34 J		0.66 J			<100	
L05	20	01	19798	11.0	0.18 J		0.64 J			<100	
L05	20	01	19799	13.0	0.33 J		0.50			<100	
L05	20	01	19840	15.0	0.28 J		0.78 J			<100	
L05	20	01	19841	17.0	0.26 J		0.39			<100	
L05	20	01	19842	18.0	0.06 UJ		0.55 J				
L05	20	01	19843	19.0	0.31 J		0.92			<100	
L05	20	01	19844	20.0	0.33 J		1.51 J				
L05	20	01	19845	21.0	0.18 J		0.75 J			<100	
L05	20	01	19848	22.0	0.29 J		1.27 J				
L05	20	01	19849	23.0	0.30 J		1.40			<100	
L05	20	01	19862	25.0	0.06 UJ		0.49 J			<100	
L05	20	01	19861	26.0	0.18 J		0.79 J				
L05	20	01	19863	27.0	0.20 J		0.55 J			2.8 J	
L05	20	01	19877	29.0	0.05 UJ		0.29			<100	
L05	20	01	19882	30.0	0.101	0.135	0.158	0.0026 U	0.0026 U	2.5 J	0.28 J
L05	20	02	19906	1.0	1.10		4.56 J			205	
L05	20	02	19907	2.0	1.03 J		3.83				
L05	20	02	19908	3.0	1.75 J		2.06 J			<100	
L05	20	02	19911	4.0	1.61		3.01 J	0.093	0.132		
L05	20	02	19912	5.0	0.99 J		3.15			<100	
L05	20	02	19913	6.0	0.54 J		1.60 J				

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
L05	20	02	19914	7.0	0.65		0.81 UJ			<100	
L05	20	02	19916	9.0	0.42 J		0.81 J			42.3 J	
L05	20	02	19919	11.0	NS		NS			<100	
L05	20	02	19920	13.0	0.45		0.45 UJ			<100	
L05	20	02	19921	15.0	0.31		0.70 J			<100	
L05	20	02	19922	16.0	0.39		1.51 J				
L05	20	02	19923	17.0	0.48		1.77			<100	
L05	20	02	19937	19.0	0.28		1.24			<100	
L05	20	02	19938	21.0	0.33 J		1.06 J			<100	
L05	20	02	19939	22.0	0.05		0.40 J				
L05	20	02	19940	23.0	0.07		0.61 J			<100	
L05	20	02	19951	25.0	0.24 J		1.49			<100	
L05	20	02	19952	26.0	0.28		0.61 J				
L05	20	02	19953	27.0	0.20		0.94 J			<100	
L05	20	02	19964	29.0	0.34 J		1.31 J			<100	
L05	20	02	19974	30.0	0.145	0.153	0.155	0.0026 U	0.00035 J	2.6 J	0.27 J
L05	20	03	20045	1.0	0.76		14.02			85.2 J	
L05	20	03	20046	2.0	0.66		7.98				
L05	20	03	20047	3.0	1.08		6.86			<100	
L05	20	03	20063	4.0	0.37		2.04				
L05	20	03	20064	5.0	0.96		2.73 J			<100	
L05	20	03	20065	6.0	0.54		1.96 J				
L05	20	03	20066	7.0	0.59		1.90 J			<100	
L05	20	03	20072	9.0	0.42		2.19			<100	
L05	20	03	20076	11.0	0.43		0.96 J			<100	
L05	20	03	20079	13.0	0.49		1.15 J			<100	
L05	20	03	20087	15.0	0.27		0.54 J			<100	
L05	20	03	20088	16.0	0.41		0.88 J				
L05	20	03	20089	17.0	0.27		2.16 J			<100	
L05	20	03	20092	19.0	0.32		2.17 J			<100	
L05	20	03	20101	21.0	0.19		1.12 J			<100	
L05	20	03	20102	22.0	0.24		1.77 J				
L05	20	03	20103	23.0	0.30		0.51 J			<100	
L05	20	03	20110	25.0	0.37		1.30 J			<100	
L05	20	03	20111	26.0	0.26		0.67				
L05	20	03	20112	27.0	0.23		0.43 J			<100	
L05	20	03	20121	29.0	0.24		1.27			<100	
L05	20	03	20126	30.0	0.166	0.161	0.154	0.0026 U	0.0026 U	1.8 J	0.51 U
L05	20	04	20133	1.0	0.92		12.75			1105 J	
L05	20	04	20134	2.0	NS		NS	0.088	0.482		
L05	20	04	20135	3.0	1.02		7.06			<100	
L05	20	04	20136	5.0	0.43		0.66 J			<100	
L05	20	04	20144	7.0	0.98		1.14 J			<100	
L05	20	04	20145	9.0	0.50		1.82			<100	
L05	20	04	20146	11.0	0.39		1.64 J			<100	
L05	20	04	20147	12.0	0.36		0.68 J				
L05	20	04	20148	13.0	0.24		0.44 J			<100	
L05	20	04	20149	15.0	0.20		0.23			<100	
L05	20	04	20159	16.0	0.28		1.20				
L05	20	04	20160	17.0	0.31		1.03 J			<100	
L05	20	04	20161	19.0	0.09		0.82 J			<100	
L05	20	04	20165	21.0	0.40		0.71 J			<100	
L05	20	04	20168	22.0	0.29		0.22 UJ				

Table 3
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
L05	20	04	20169	23.0	0.27		1.00 J			<100	
L05	20	04	20172	25.0	0.24		0.56 J			<100	
L05	20	04	20179	26.0	0.24		1.24				
L05	20	04	20180	27.0	0.17		1.33 J			<100	
L05	20	04	20181	29.0	0.16		0.68 J			<100	
L05	20	04	20182	30.0	0.141	0.159	0.124	0.0026 U	0.0026 U	2.1 J	0.16 J
L05	20	05	19978	1.0	1.07		40.07 J			201	
L05	20	05	19979	2.0	0.64 J		0.73	0.098	0.098		
L05	20	05	19980	3.0	1.17 J		2.19			<100	
L05	20	05	19981	5.0	0.63		1.00 J			<100	
L05	20	05	19982	6.0	0.59		2.99 J				
L05	20	05	19983	7.0	0.49		1.24 J			<100	
L05	20	05	19997	8.0	0.76 J		1.01 J				
L05	20	05	19998	9.0	0.38		1.33 J			<100	
L05	20	05	19999	11.0	0.26		0.69 J			<100	
L05	20	05	20000	13.0	0.62		0.85			<100	
L05	20	05	20007	15.0	0.37		0.57			<100	
L05	20	05	20008	16.0	0.32		0.48				
L05	20	05	20009	17.0	0.21		0.61 J			<100	
L05	20	05	20010	19.0	0.20		0.69 J			<100	
L05	20	05	20019	21.0	0.41		1.52			<100	
L05	20	05	20020	22.0	0.28		1.84				
L05	20	05	20021	23.0	0.26		1.18 J			<100	
L05	20	05	20026	25.0	0.28		1.51			<100	
L05	20	05	20027	26.0	0.19		0.47				
L05	20	05	20028	27.0	0.31		0.62 J			<100	
L05	20	05	20035	29.0	0.41		1.21			<100	
L05	20	05	20041	30.0	0.161	0.147	0.182	0.0026 U	0.0026 U	2.8 J	0.33 J

Table 3
LPH Soil Boring Sample Results

Analytes:

Th-232 - Thorium-232	PCE - Tetrachloroethene
U-234 - Uranium-234	Ni - Nickel
U-238 - Uranium-238	Be - Beryllium
TCE - Trichloroethene	

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

R - Validation qualifier used to indicate that the result is considered unusable.
U - Validation qualifier used to indicate that the result was qualified as non-detect
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 3 for boring locations.

DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system

DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection limit of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).

DL sample is analyzed for volatile organic compounds (TCE and PCE) using solid phase microextraction and capillary gas chromatography by Stone Environmental Inc.

SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.

NS - Not sampled due to insufficient recovery.

Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.

Blank cell indicates analysis was not performed.

Result is above Site cleanup level.

Figure 2
Intervals, Increments and Analyses for Samples

	Row 1			Row 2			Row 3		
SU Interval 1	0	--	No sample	0	--	No sample	0	--	No sample
	1	SP		1	DL	Rad	1	DL	Rad
	2			2	DL	Rad	2	DL	Rad & Nickel
	3	DL	Rad	3	DL	Rad & Nickel	3	DL	Rad
	4	DL	Rad & Nickel	4	SP		4	DL	Rad & Nickel
	5	DL	Rad	5			5	DL	Rad
	6	DL	Rad & Nickel	6	DL	Rad	6	DL	Rad & Nickel
	7	DL	Rad	7	DL	Rad & Nickel	7	SP	
	8	DL	Rad & Nickel	8	DL	Rad	8	SP	
9	DL	Rad	9	DL	Rad & Nickel	9	DL	Rad	
SU Interval 2	10	DL	Rad & Nickel	10	DL	Rad	10	DL	Rad & Nickel
	11	SP		11	DL	Rad & Nickel	11	DL	Rad
	12			12	DL	Rad	12	DL	Rad & Nickel
	13	DL	Rad	13	DL	Rad & Nickel	13	DL	Rad
	14	DL	Rad & Nickel	14	SP		14	DL	Rad & Nickel
	15	DL	Rad	15			15	DL	Rad
	16	DL	Rad & Nickel	16	DL	Rad	16	DL	Rad & Nickel
	17	DL	Rad	17	DL	Rad & Nickel	17	SP	
	18	DL	Rad & Nickel	18	DL	Rad	18	SP	
19	DL	Rad	19	DL	Rad & Nickel	19	DL	Rad	
SU Interval 3	20	DL	Rad & Nickel	20	DL	Rad	20	DL	Rad & Nickel
	21	SP		21	DL	Rad & Nickel	21	DL	Rad
	22			22	DL	Rad	22	DL	Rad & Nickel
	23	DL	Rad (1' spoon)	23	DL	Rad & Nickel	23	DL	Rad
	24	DL	Rad	24	SP		24	DL	Rad & Nickel
	25	DL	Rad & Nickel	25			25	DL	Rad
	26	DL	Rad	26	DL	Rad	26	DL	Rad & Nickel
	27	DL	Rad & Nickel	27	DL	Rad & Nickel	27	SP	
	28	DL	Rad	28	DL	Rad	28	SP	
29	DL	Rad & Nickel	29	DL	Rad & Nickel	29	DL	Rad (1' spoon)	
30	SP		30	SP		30	SP		
31			31			31			
32			32			32			

Notes:

- Solid lines indicate the spoon increment (2')
- Zero indicates the ground surface
- Maximum depth at 30' bgs

Overview:

- Row 1 = SP's (1-3', 11-13', 21-23' and 30-32')
- Row 2 = SP's (4-6', 14-16', 24-26' and 30-32')
- Row 3 = SP's (7-9', 17-19', 27-29' and 30-32')
- All Rows = DL's at 1' increments between SP's

Analyses Intervals:

- SU Interval 01:
All SP samples from rows 1, 2 and 3 that were collected between 0 - 10' bgs
- SU Interval 02:
All SP samples from rows 1, 2 and 3 that were collected between 11 -20' bgs
- SU Interval 03:
All SP samples from rows 1, 2 and 3 that were collected between 21 -30' bgs

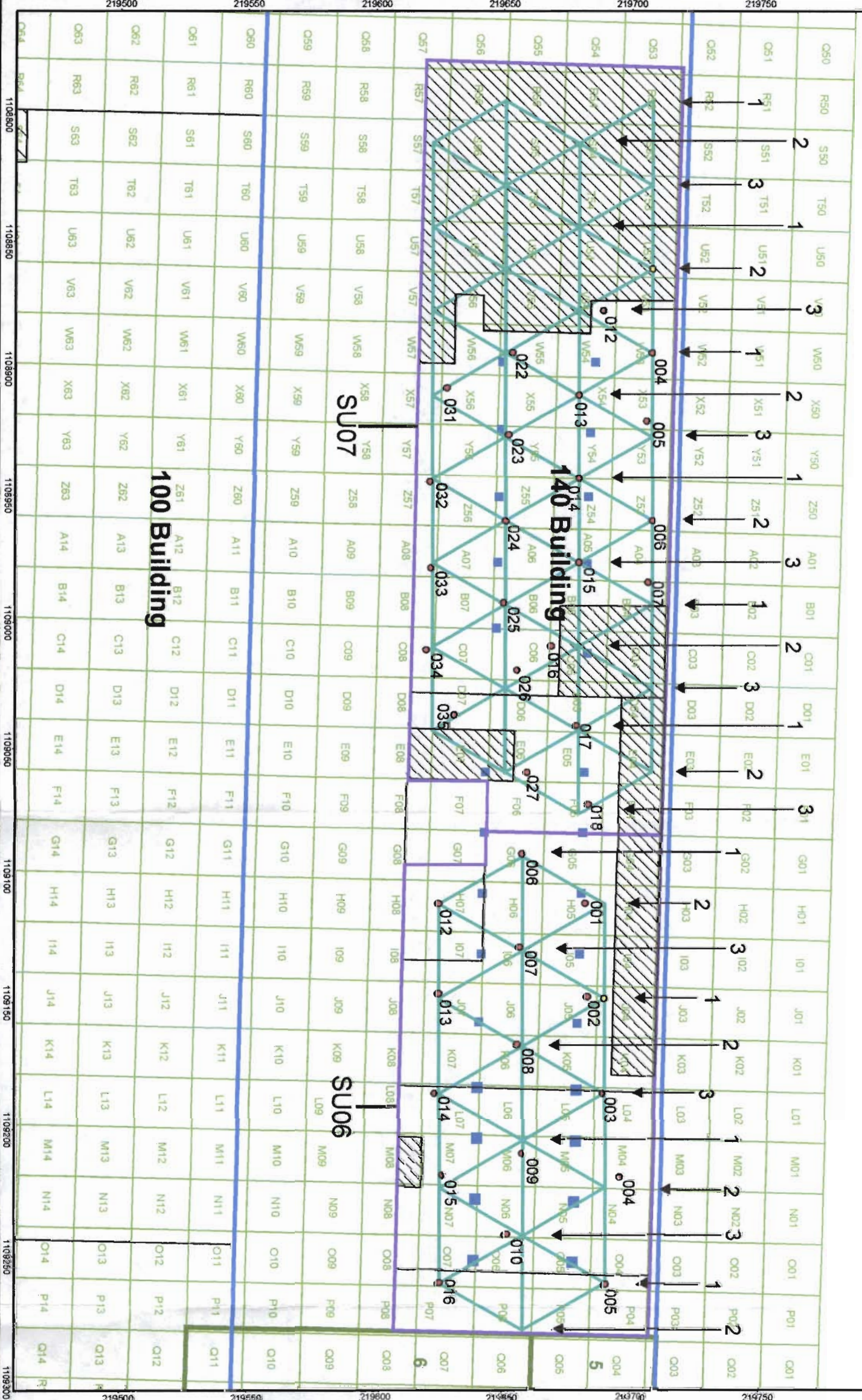
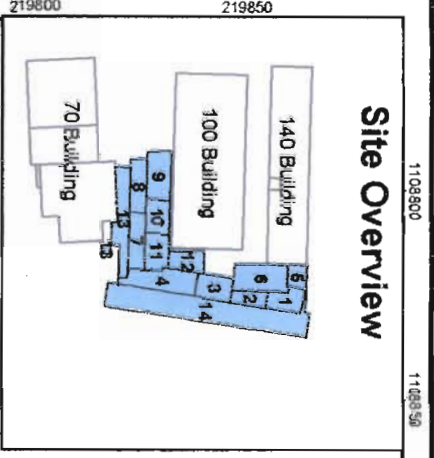
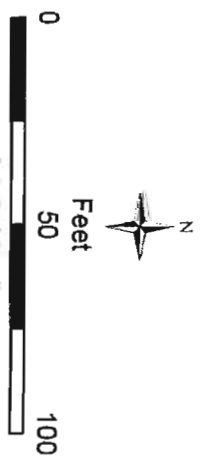


Figure 1
SU06 and SU07
Systematic Sampling
Locations

Legend

- Boring Location
 - ◻ Random Sample Start Point
 - 140 Building Column
 - Systematic Sampling Grid
 - Building
 - Property Line
 - Class 2 Survey Unit
 - ▨ Interference Area
 - ▧ Subcell Boundary
 - ▭ Cell Boundary
- Row 1 SP samples at 1'-3', 11'-13', 21'-23'
 Row 2 SP samples at 4'-6', 14'-16', 24'-26'
 Row 3 SP samples at 7'-9', 17'-19', 27'-29'
 All Rows SP sample at 30'-32'
 All Rows DL samples at 1' increments between SP samples
 See Table 1 for summarized sample results.



Projection Information
 State Plane Projection
 Lone Island Zone
 North American Datum, 1983
 File: UR277010-039
 GTE OPERATIONS SUPPORT INCORPORATED
 HICKSVILLE, NEW YORK



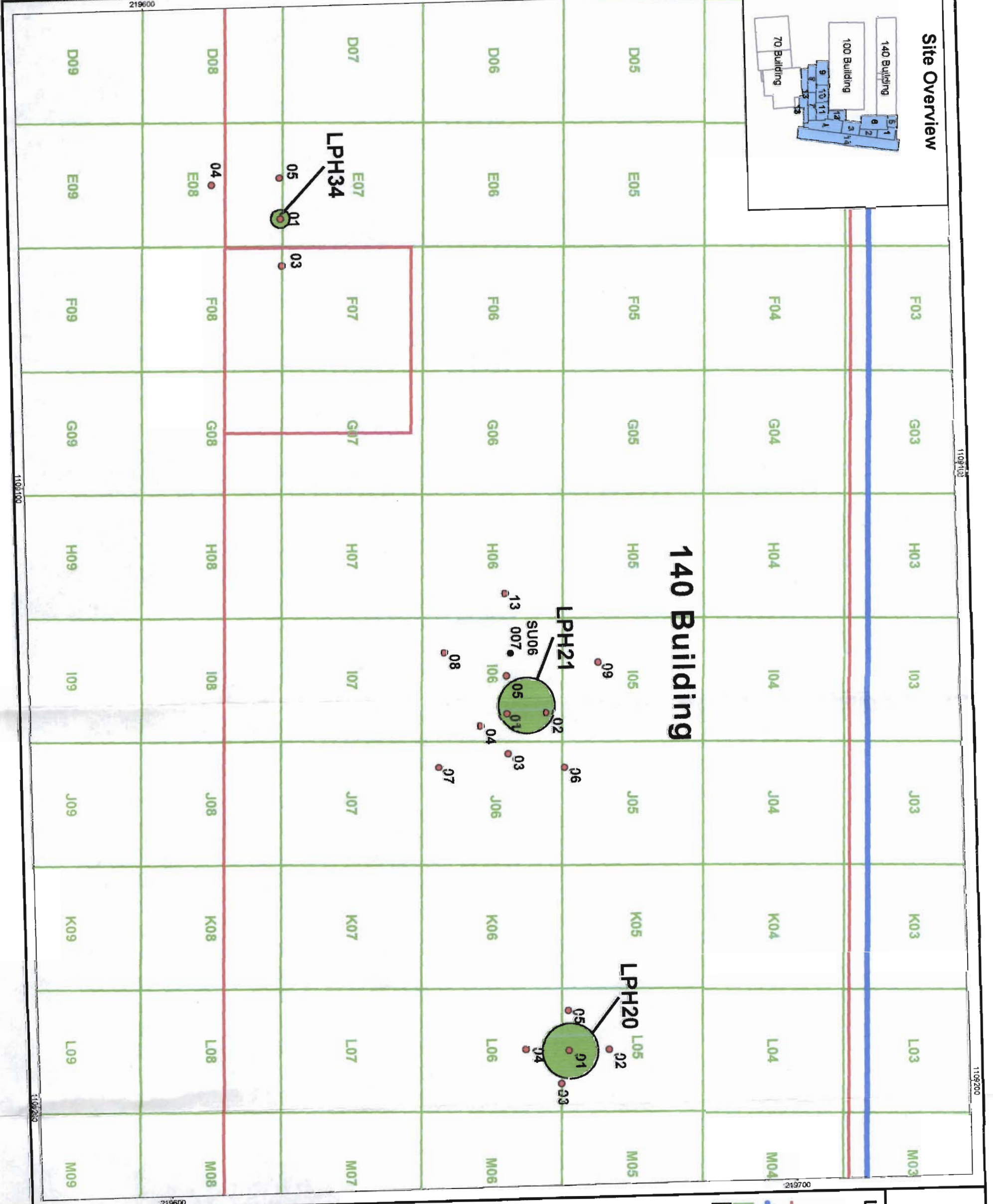


Figure 3
LPH Soil Boring
Sample Results

Legend

- Boring Location
- SU06 Boring Location
- Building
- Property Line
- Subcell Boundary
- Historic Leach Pool

See Table 3 for summarized sample results.
Note: Leach pool data provided by available historical maps



Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet
NYSDOC Y000895-1
URS7/010-039

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK



**Systematic
Subsurface Soil Sampling and Analysis Plan
Beneath the 140 Building**

**Former Sylvania Electric Products Incorporated Facility
Hicksville, New York
GTE Operations Support Incorporated**

November 2004

This Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building has been reviewed by URS Corporation - New York, and I am in agreement with the methods and procedures to be used in this investigation.

URS Corporation - New York



Robert D. Brathvode, P.E.
Engineer of Record

This Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building has been reviewed by Professional Radiation Consulting, Inc. (PRCI) in accordance with Envirocon's New York State Department of Labor Radioactive Materials License No. 3095-4330, and I am in agreement with the methods and procedures to be used in this investigation.

Shane Brightwell, CHP for Shane Brightwell

Shane Brightwell, CHP
President, PRCI
RSO, Radioactive Materials License No. 3095-4330

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FIGURES

Figure 1 – Survey Units Beneath the 140 Building

1.0 INTRODUCTION

This Systematic "Subsurface Soil Sampling and Analysis Plan" (SSSAP) has been prepared to characterize the soils in accessible areas beneath the 140 Building. This SSSAP describes applicable guidance, characterization (i.e., survey, design and sampling protocols), and laboratory analysis for the soils. The results of this SSSAP will enable GTE Operations Support Incorporated (GTEOSI) to determine the extent to which remedial activities are necessary beneath the 140 Building.

During the last two years, soils containing residual radionuclides of uranium (U) and thorium (Th) were excavated from the Former Sylvania Electric Products Incorporated (Sylvania) property in Hicksville, New York (the Site) and shipped off Site to an approved disposal facility. To date, remediation activities at the Site have focused primarily on the eastern portions of the 100 and 140 Properties. This eastern focus has been based on what is known regarding historical Sylvania facilities and operations, and findings of previous Site investigations.

Subsurface investigation was performed under the eastern portion of the 140 Building, which identified target analytes exceeding the cleanup criteria. Consequently, approximately 5,000 square feet (ft²) of the eastern end of the 140 Building was razed to accommodate remediation. The remaining warehouse portion of the building footprint (approximately 49,000 ft²) is the subject of this Plan.

The various sections of this SSSAP present the steps to be implemented to characterize the subsurface soils in the areas below the 140 Building. The characterization will include not only radionuclides, but also certain volatile organic compounds (VOCs) [(tetrachloroethene (PCE) and trichloroethene (TCE)] and nickel (Ni) (collectively, "target analytes"). Modification to these steps will be permitted when field conditions or sample results indicate the modifications would better support the intent and objective of this SSSAP as stated in Section 2.0 below. All modifications to steps in this Plan shall be made with the prior concurrence of the Radiation Safety Officer (or his designated alternate) and the prior approval of the Project Coordinator.

2.0 OBJECTIVE

The objective of this Plan is the characterization of soils in specified areas as shown in Figure 1. For radiological characterization purposes, these areas are referred to as "survey units" (SUs) as defined in NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM).

Note: The area designated as SU06 is the approximate eastern one-third of the 140 Building. Within SU06, a small portion of the southern area (control point area) and a portion of the northwestern area (sample storage) of the survey unit are not readily accessible for characterization (i.e., building alterations or relocation of structures would be required). The area designated as SU07 lies to the west of SU06, and comprises slightly less than two-thirds of the 140 Building area. Portions of the southeastern (lunch room) and northeastern corners (sample prep & lab area and sample storage area) of the survey unit and most of the western portion (office area) of the survey unit are not readily accessible for characterization (Figure 1).

3.0 APPLICABLE GUIDANCE

This SSSAP was prepared in accordance with Voluntary Cleanup Agreement, Site V-00089-1, Index W1-0903-01-12, between New York State Department of Environmental Conservation (NYSDEC) and

GTEOSI. Field procedures and analytical methods identified in the Site's approved *Comprehensive Soil Remediation Work Plan, Revision 5: June 2003* (Work Plan) have been incorporated in this SSSAP where appropriate. Guidance specific to radiological and chemical characterization are described in their associated sections, as applicable.

4.0 CHARACTERIZATION

The soils within SU06 and SU07 are not expected to contain target analytes at concentrations greater than the applicable target cleanup levels. (Note: the target cleanup levels are defined in the Work Plan). The following sources were reviewed during preparation of this SSSAP:

- **Historic maps, aerial photos, and historic documents** - These sources indicate that one building in which uranium fuel element fabrication occurred during the 1950s and 1960s occupied most of the southeastern half of SU06 and a small building historically occupied the southeastern corner of SU07.
- **Soil borings performed within the SUs during previous investigations** - Three shallow borings conducted in SU06 did not indicate the presence of target analytes above cleanup levels.
- **Excavation in adjacent cells** - Field surveys and sampling on the west side of Cell 5 and Cell 6 indicated that target analytes above cleanup levels did not continue to the west beyond the cell boundaries into SU06.

The radiological characterization is designed using guidance provided in MARSSIM as discussed below (Section 4.1). Concurrently, VOCs and Ni soil residuals will be characterized as described in Section 4.2.

4.1 RADIOLOGICAL

The following sections describe the radiological guidance and sampling parameters to be used to execute this SSSAP. This SSSAP has been developed using a combination of applicable MARSSIM guidance, historic documents, and knowledge of Site subsurface conditions gained during investigations and remediation.

4.1.1 Applicable Radiological Guidance

The investigation of soils to determine the presence (if any), concentrations, extent, and boundaries of radionuclides is termed a *characterization* survey. The principles for a characterization survey described in Chapter 5 of MARSSIM have been considered in developing this SSSAP. Specific methods recommended in MARSSIM for subsurface soil sampling have also been incorporated in this SSSAP.

4.1.2 Survey Unit

Classification

Both SU06 and SU07 were designated as MARSSIM Class 2 SUs since they are not expected to exhibit soil target analytes at concentrations exceeding the cleanup levels. A systematic triangular sampling pattern will be used to provide uniform lateral coverage of these SUs. This triangular grid based system, as prescribed by MARSSIM for Class 2 SUs, is useful as it accommodates both the radiological and chemical sampling.

Layout

SU06 is approximately 1,800 square meters (m²) or 19,378 ft². Of this total area, 1,634 m² (17,586 ft²) are readily accessible for characterization. SU07 is approximately 2,760 m² (29,713 ft²). Of this total area, only 1,410 m² (15,179 ft²) are readily accessible for characterization. As indicated in Section 4.1.3, a triangular grid system will be used and nomenclature will be adopted from the Site grid system described below.

The Site is on a northing/easting planar grid coordinate system. The Site grid pattern was developed to accommodate excavation cells, and each cell is divided into subcells. Each subcell has a north-south length of 6.7 meters (m) or 22 feet (ft) and an east-west width of 6.1 m (20 ft). The subcells are uniquely identified by letter designations for north-south columns and number designations for east-west rows. This grid coordinate system will be used for defining the sample nomenclature within the SUs.

4.1.3 Sample Locations

Number of Horizontal Sample Locations

MARSSIM bases the number of samples (N) in a SU on how close the expected average concentration in the SU is to the cleanup level, how much variation there is in the observed or expected concentrations, and the sensitivity of equipment scanning capabilities with respect to the cleanup levels. For SU06 and SU07, the minimum number of samples to be collected in each SU is 13. Although MARSSIM indicates only 13 samples are sufficient, 16 sample locations per each SU were selected to provide lateral coverage and to ensure that the minimum number of 13 samples can be collected in the event field conditions do not allow collection of soil samples at all 16 locations. If sample locations fall outside the SU boundary due to the grid orientation, they may be relocated inside the grid using the criteria described in below.

Sample Start Point

MARSSIM suggests establishing a systematic sampling pattern using a random start point. A random number generator was used to select planar coordinates within the footprint of each of the SU boundaries. The associated systematic triangular sampling pattern, as described below, was established in each SU by placing one of the sample locations at the start point coordinates.

Horizontal Sample Locations

For each SU, once N, the SU size, the grid system pattern, and the start point were established, the sample locations were then selected and mapped. The calculated maximum east-west distance between sampling locations (L_N) and north-south distance between sampling rows (L'_N) are listed below.

Survey Unit	N (samples)	L _N (meters)	L' _N (meters)
SU06	16	10.86	9.40
SU07	16	10.09	8.74

Some of the sample locations may have to be modified to avoid obstructions encountered in the field (i.e., utilities). Any sample location that must be relocated up to one-third of the diagonal distance between planned sample locations [≤ 3.0 m (9.8 ft) in SU06 or ≤ 3.4 m (11.2 ft) in SU07] will be relocated accordingly. Any sample location that must be relocated a distance greater than the applicable distance

specified above will be either eliminated or randomly relocated using the method for generating random coordinates as described previously.

If a sample location falls just outside of the SU boundary, the sample may be evaluated for relocation to within the SU boundary, depending on the required distance and obstructions. The result may be that the SU has more than the minimum number of sampling locations in order to provide as uniform coverage as practical. The addition of sample points does not reduce the effectiveness of the methods described in MARSSIM.

Vertical Sampling Depth

Vertical sampling and excavation depths on Site have been measured in feet below ground surface (bgs); therefore, vertical units are expressed here in both meters and feet (in parentheses). Based on the results of subsurface soil investigations and excavations, most impacts occur from the surface down to about 7.3 m (24 ft) bgs, with infrequent impacts identified greater than 7.3 m (24 ft) bgs. Impacts below 7.3 m (24 ft) bgs were usually identified based on shallow indicators. Given this history, a target maximum sampling depth of approximately 9 m (30 ft) bgs has been established to provide an additional 2-m (6-ft) buffer and to accommodate the pattern of the vertical sampling intervals as described below. If exceedences of the cleanup objectives are encountered at 9 m (30 ft) bgs, additional sampling will continue to define the vertical extent of impacts.

Vertical Sample Intervals

Based on the results of excavation and subsurface soil investigations performed during remediation on Site, impacts may be present in relatively thin soil veins. Specifically, concentrations may increase from not detected to greater than the cleanup levels in the next lower 0.3-m (1-ft) interval. Within the same boring, the concentrations may then decrease rapidly over the next 0.3- or 0.6-m (1- or 2-ft) intervals. Note that the measured depths of the soil layers with elevated radiological impacts may vary due to both depositional nature of the impacts and the assumption that the surface is a uniform elevation (measured bgs).

Based on the above information, the following subsurface soil sampling parameters were established.

- Characterization/Final Verification samples will be collected at 3-m (10-ft) intervals. These samples will be collected, documented, labeled, and analyzed by on-Site and off-Site analytical methods as Sample Point (SP) samples. SP samples are treated the same as Confirmation/Verification (CF/VF) samples as described in the Work Plan.
- The SP sample pattern was established so that each sample at the corner of an equilateral triangle is vertically staggered by 1 m (3.3 ft). For example:
 1. The first triangle corner (#1) sampling location will have SP samples collected from the top 1-ft segment of the 1-, 4-, and 7-m (1-, 11-, and 21-ft) intervals;
 2. The second triangle corner (#2) sampling location will have SP samples collected from the top 1-ft segment of the 2-, 5-, and 8-m (4-, 14-, and 24-ft) intervals; and
 3. The third triangle corner (#3) sampling location will have SP samples collected from the top 1-ft segment of the 3-, 6-, and 9-m (7-, 17-, and 27-ft) intervals.

The staggered vertical sample pattern result for a single set of three adjacent sample locations resembles a triangular "staircase" or helical pattern. This pattern works as follows*:

- a) The sample locations in the westernmost north-south oriented column are all sampled at the intervals outlined in #1 above;
- b) The sample locations in the second north-south oriented column to the east are all sampled at intervals outlined in #2 above;
- c) The sample locations in the third north-south oriented column to the east are all sampled at the intervals outlined in #3 above;
- d) The sample locations in the fourth north-south oriented column to the east are all sampled at the intervals outlined in #1 above;
- e) The sample locations in the fifth north-south oriented column to the east are all sampled at the intervals outlined in #2 above; and.
- f) The sample locations in the sixth north-south oriented column to the east are all sampled at the intervals outlined in #3 above.

* The pattern repeats after every third column.

- The 0.3-m (1-ft) interval samples between the SP sample intervals will be collected and analyzed on Site as Delineation (DL) Samples. This will provide additional assurance that any relatively thin veins of impacts present between the SP interval samples will be identified.

4.2 CHEMICAL

As indicated in the introduction of this SSSAP, the potential for residual VOCs and Ni impacts in the SUs will be evaluated concurrently with the radiological impacts. The triangular grid system established under MARSSIM and the vertical interval sampling were evaluated for this purpose and accepted. This system provides both vertical and lateral coverage to adequately evaluate the potential for chemical impacts. If elevated concentrations of VOCs and/or Ni are detected, the soils around the location will be considered for additional investigation or remedial action, as appropriate.

4.3 MATERIALS AND METHODS

The following narrative describes the sample collection, analysis, and evaluation methodology to be used to execute this SSSAP.

4.3.1 Soil Sampling Equipment

A hollow-stem auger drill rig with split-spoon sampling capabilities will be used to collect soil samples. The split spoon [0.6 m (2 ft) in length and 0.08 m (3 inches) in diameter] will be advanced in 0.6-m (2-ft) intervals. Two, 0.3-m (1-ft) interval samples will be collected per split-spoon.

4.3.2 Sample Field Screening and Preparation

Each sample will be initially field-screened with a 3-inch sodium iodide (NaI) gamma detector to evaluate potential residual radiological impacts and a photoionization detector (PID) to evaluate the presence of VOCs. In addition, an x-ray fluorescence (XRF) spectrometer will be used on Site to screen samples for Ni. Sample descriptions and field observations will be documented on the boring logs.

4.3.3 Sample Collection

A minimum of two samples will be collected per split spoon barring loss or incomplete recovery. These samples will be designated as either DL or SP, as applicable. DL samples will be collected at the intervals between SP samples from the surface down to the bottom sampling depth of approximately 9 m (30 ft) bgs.

Samples collected for radiological analysis will be placed in 1-liter Marinelli containers. DL samples will be used for radiological screening and analyzed on Site using gamma spectroscopy. The SP samples will be analyzed for radionuclides on Site and off Site, consistent with the Work Plan criteria for CF/VF sampling.

Samples collected for chemical analysis will be placed in pre-preserved methanol vials and non-preserved 40-ml vials. DL samples are not analyzed for VOCs or Ni unless field screening/observations support collection of a chemical sample. DL samples with PID screening readings of 50 parts per million (ppm) or higher will be collected for VOC analysis by Severn Trent Laboratories (STL), Earth City, Missouri. The SP samples will be collected for VOCs both on Site and off Site, consistent with the Work Plan criteria for CF/VF sampling.

A geologist will describe the samples in general accordance with the Unified Soil Classification System (USCS). Sample descriptions will include soil type, color, moisture, and other visual observations and field readings. This information will be documented on soil boring logs.

All samples will be logged into the Site sample tracking and barcode system.

4.3.4 Sample Analysis

Each DL sample will be analyzed for 10 minutes by on-Site gamma spectroscopy (providing a nominal detection limit of approximately 0.014 pCi/g for Th-232 and 3.6 pCi/g for U-238, both of which are far below the Site cleanup levels) to quantify the concentrations of target radionuclides of U and Th. Each SP sample will be analyzed for 30 minutes by on-Site gamma spectroscopy (providing a nominal detection limit of approximately 0.008 pCi/g for Th-232 and 2.0 pCi/g for U-238, both of which are far below the Site cleanup levels) as well as by alpha spectroscopy at STL for isotopic U and Th.

If DL samples are collected for chemical analyses, they may be screened using XRF for Ni and analyzed for VOCs on Site by Stone Environmental. Each SP sample will be analyzed for VOCs on Site by Stone Environmental as well as by STL for VOCs and Ni. SP samples will also be analyzed for beryllium (Be).

5.0 SAMPLING/ANALYSIS PROCEDURE

The following is the step-by-step procedure for sample collection and subsequent analysis.

1. The applicable Chemical/Radiological Work Permit (C/RWP) and Activity Hazards Analysis (AHA) will be in place prior to commencement of sampling.
2. The field crew will be briefed on this procedure prior to commencement of sampling.
3. Each sampling location will be located and surveyed in the field using either a laser positioning system (LPS) or global positioning system (GPS) surveying system.
4. Each sample location will be investigated for utilities and obstructions prior to saw cutting any pavement or commencement of sampling. If a sample location is in an area where utilities or obstructions have been identified, then the sample location shall be adjusted to a safe, practical location as close to the proposed location as possible, but no more distant than 3.0 m (9.8 ft) in SU06 or 3.4 m (11.2 ft) in SU07. Any sample location that cannot be relocated within these criteria will be eliminated or randomly relocated per Section 4.1.3.
5. The split-spoon sampler will be advanced to the predetermined maximum depth range of approximately 9 m (30 ft) bgs, in 0.6-m (2-ft) intervals, collecting two, 0.3-m (1-ft) samples per sampling cycle.
6. Radiological field screening of samples will be conducted on each sample using a NaI gamma detector.
7. Chemical field screening of samples for VOCs will be conducted on each sample using a PID. An XRF spectrometer will be used for on-Site Ni screening of every other sample beginning with the second sample in the boring, continuing with the fourth sample, sixth sample, etc. Soil samples (~100 g) for Ni screening by XRF will be collected in Ziploc[®] bags if the soils are relatively dry and in glass jars if the moisture content is approximately 20% or higher. The samples will be delivered to Stone Environmental for either direct screening by XRF, or for drying in an oven, and then screening by XRF. For those DL quality control (QC) samples to be submitted to STL, the soils will be transferred from the Ziploc[®] bags to 40-ml glass vials in the sample preparation area. For QC purposes, every tenth sample will be screened by XRF and then submitted to STL for duplicate analysis. SP samples will be analyzed for Be.
8. A geologist will log the borings and record observations and measurements consistent with the USCS nomenclature and procedures, noting indications of soil impacts by chemicals and other potential contributors to contamination.
9. DL screening samples will be collected at the intervals between SP samples prescribed in Section 4.1.3. Radiological DL samples will be analyzed by on-Site gamma spectroscopy for a 10-minute count time. If field conditions warrant and chemical DL samples are collected, they will be analyzed for VOCs on Site by Stone Environmental. Chemical DL samples with PID readings of 50 ppm or greater will be submitted for analysis to STL.
10. SP samples will be collected at the intervals prescribed in Section 4.1.3 and will be treated in the same manner as CF/VF samples. Radiological SP samples will be analyzed by on-Site gamma spectroscopy for a 30-minute count time as well as off-Site isotopic analyses by STL. Chemical SP samples will be collected and placed in vials with methanol for on-Site analysis by

Stone Environmental and in 40-ml glass vials for submission to STL for analysis of VOCs, Ni, and Be.

11. If oily soils are encountered, they will be collected while sampling as either DL or SP samples. Pursuant to the NYSDEC request, these soils will be submitted to STL for analysis of polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) base/neutral fraction. The soils collected for PCBs and SVOC analyses will be placed in 250-ml glass jars; a minimum of 100g is needed to accommodate both analyses. The containers for the other analyses will follow the instructions provided above. (If sufficient sample volume of oily soils is not available, the chemical analyses for VOCs, SVOCs, PCBs, Ni and Be will take precedence over samples for radiological analyses.
12. After the completion of sampling from a given location, the borehole will be backfilled with clean cuttings and/or clean on-Site backfill material to within 0.1 to 0.15 m (4 to 6 inches) of the top of the borehole. The remaining 0.1 to 0.15 m (4 to 6 inches) will be filled with asphalt or other applicable surfacing material.
13. Decontamination of sampling equipment will be performed in accordance with SOP-RAD-011, *Equipment Decontamination* and in accordance with the chemical decontamination procedures.

6.0 TARGET CONCENTRATIONS

The soil concentrations will be compared to the Site cleanup levels as defined in the Work Plan.

7.0 ASSESSMENT

Currently, the SUs are beneath Building 140. As a result, performing surface radiation scans as surveys are not practical to detect the presence of surface or subsurface radiological impacts in excess of cleanup criteria. MARSSIM allows for modifications to the survey design to address subsurface soils. However, in order to classify SUs as non-impacted, or to facilitate remediation planning, subsurface characterization is required. In addition, the data quality objectives process also allows that, based on the data needs for a survey, the decision can be made that sampling and analysis are necessary.

7.1 RADIOLOGICAL

7.1.1 Survey Unit Assessment

Each SU will be characterized/verified vertically at 3-m (10-ft) staggered intervals. This approach for subsurface soils is not directly addressed in MARSSIM, which provides characterization and final verification guidance primarily on surface soils. Therefore, each 3-m (10-ft) depth interval will be evaluated independently as if that interval were representative of an undulating soil surface, using the MARSSIM approach to surface soils. The SP samples within each 3-m (10-ft) depth interval will be treated as if they were collected from a continuous varying surface that existed at their corresponding depths [i.e., all samples in the 0 to 3-m (0 to 10-ft) interval will be evaluated independently using a MARSSIM statistical test and all samples in the 3- to 6-m (10- to 20-ft) interval will be evaluated independently using the MARSSIM statistical test]. This approach will be used for each of the 3-m (10-ft) intervals.

7.1.2 Decision Analysis

The radiological analytical results will be evaluated using the default null hypothesis recommended in MARSSIM, which states: "The residual radioactivity in the survey unit exceeds the release criterion." The MARSSIM "Sign Test" (assuming no contribution from background radionuclides) will be used to reject the null hypothesis. When the null hypothesis is rejected, then the SU will pass and qualify for release. If the null hypothesis cannot be rejected, further investigation or remedial action may be necessary.

As stated earlier, each 3-m (10-ft) sampling interval data set will be evaluated independently as a soil (undulating planar) surface sample set generated from all SP samples within that 3-m (10-ft) interval. Therefore, there will be at least three independent evaluations of the surface and subsurface soils within each SU.

7.2 CHEMICAL

The chemical analytical results will be evaluated independently and compared to the Site cleanup levels specified in the Work Plan, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4060, or Site background concentrations. Exceedences will be considered for additional investigation or remedial action, as appropriate.

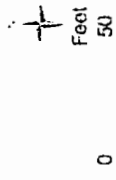
8.0 SCHEDULE

The work described in this SSSAP is scheduled to start in December 2004.

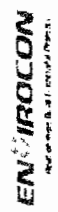
Figure 1
Survey Units - Beneath
the 140 Building

Legend

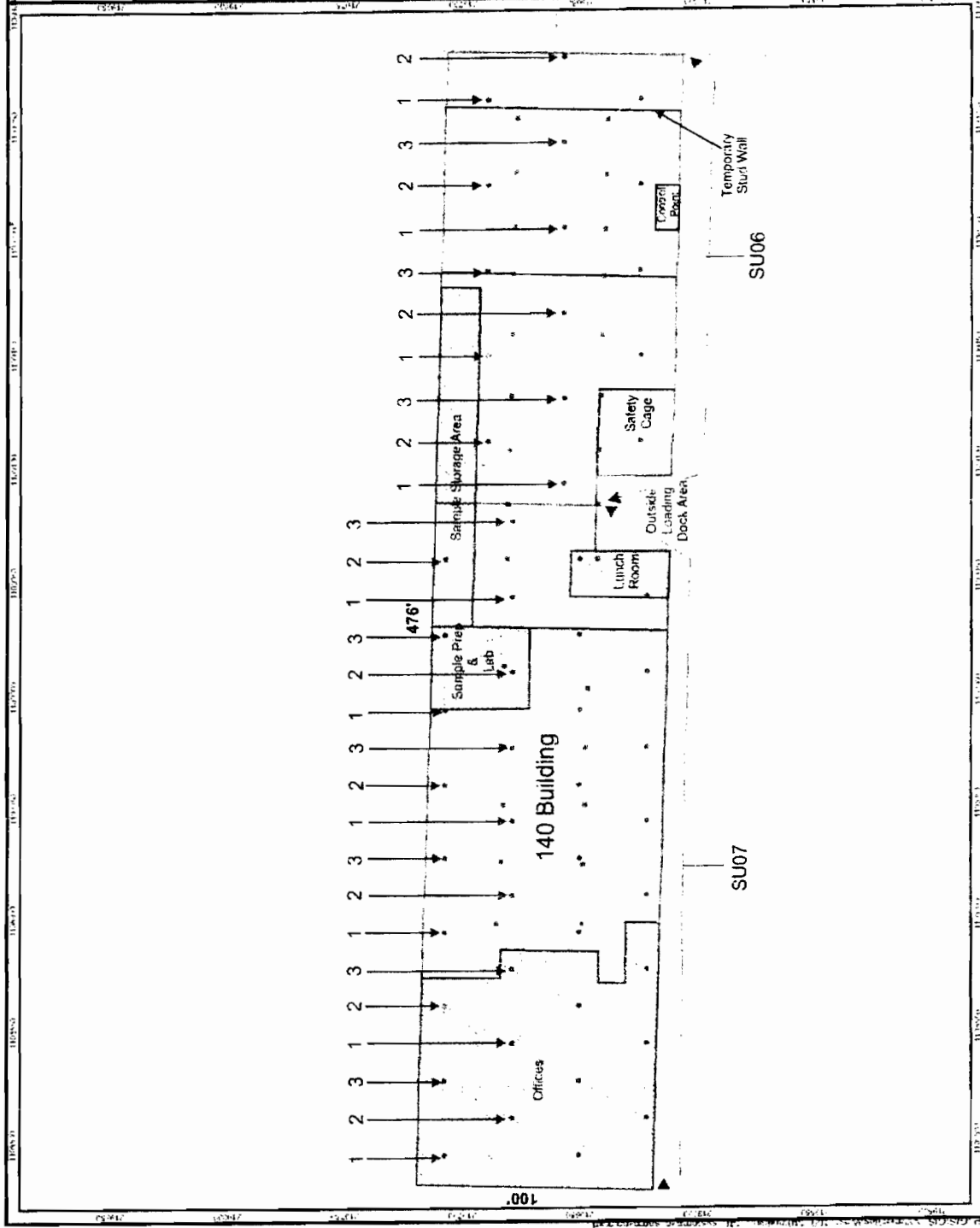
- Random Sample Starting Points
- Sample Locations
- Sample Grid Layout
- ▣ Structure Columns Building 140
- Class 2 Survey Unit
- ▭ Cell Boundaries
- ⊘ Not Accessible to Drilling Equipment
- Cell Number
- 1 1-Meter Vertical Sampling Start Interval
- 2 2-Meter Vertical Sampling Start Interval
- 3 3-Meter Vertical Sampling Start Interval



Regina Robinson
 Project Manager
 GTE OPERATIONS SUPPORT INCORPORATED
 HICKSVILLE, NEW YORK



DP# ID: 1006 H6245 November 03, 2004

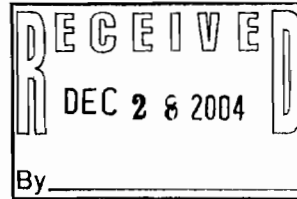


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Erin M. Crotty
Commissioner

December 20, 2004



Jean Agostinelli
Vice President - Controller
GTE Operations Support Inc.
600 Hidden Ridge Drive (HQE03E75)
Irving, TX 75038

Re: Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building and
Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building
Former Sylvania Electric Products Facility, #V00089-1

Dear Ms. Agostinelli:

The Department offers the following comments on the subject documents:

1) 100 Building - Vertical Sampling Depth

Please clarify ground surface reference point particularly as it relates to the loading dock area of the 100 property. The loading dock floor is approximately four to five feet below the 100 building's floor. The Department wants to ensure that the six foot buffer built into your sampling plan is not lost.

2) Soil Gas Sampling

Based on a preliminary analysis of the groundwater sampling results, there may still be undiscovered source areas for chlorinated solvents in the western and central portions of the site. As another tool in identifying the location of these volatile organic compounds, the Department requests that a soil gas sample be collected from each borehole after the proposed shallow samples have been removed. Please propose a depth at which to collect these soil gas samples which is somewhere between three feet and ten feet below the building slab. The samples could be analyzed by a PID in a head space sample or by your on-site laboratory, whichever you prefer.

3) Additional Investigation Borings Between Survey Units SU05 and SU04 and Between Survey Units SU04 and SU05 for the 100 Building

There is a space between survey units SU04 and SU05 and between SU03 and SU04. It is not necessary to alter the survey units. However, I am requesting five additional investigation

borings at the locations shown in the attached figure to give better coverage.

The space between SU04 and SU05 is by western portion of the chemical processing area for the former AEC building on the south portion of the gap and by an historical metal storage tank and stucco building on the north portion of the gap. Groundwater data suggests the presence of potential nickel and VOC source areas near this gap. The nickel and radiological contamination found in cell 9 probably extends to under the 100 building.

The space between SU03 and SU04 is just north of the process tank found in the northwest corner of cell 10 and is near the eastern wall of the former AEC building. The piping leading from the 100 building to the former reservoir in the rear of the 100 property apparently originated near the northeast corner of the AEC building. Based on an old figure, there was a pump in the cellar of this portion of the building which probably was used to pump water to the reservoir. This area is of interest due to contamination discovered in the reservoir. Additionally, the source of the radiological contamination in MW-2, which is downgradient of this area, has apparently not been found yet.

It is for the above reasons that I am requesting the additional investigation borings.

4) Historical Leaching Pool by the 140 Building Loading Dock

There is one historical leaching reportedly located inside the 140 building, just west of the loading dock, that was not investigated in the recent leaching pool investigation. It is just west of the former Building 2, the earlier commercial manufacturing building, and just east of a two-story frame building which I believe to be the "farm house". The farm house may have been used historically for machining operations. In SU07 for the 140 building, the survey point in the southeast corner of this survey unit comes very near the location of this former leaching pool. Please move this survey point slightly so that is located over the expected center of this pool. This pool must be investigated due to the high concentrations of PCE that were detected in nearby LPH21. Since the sediment sample in LPH21 detected percent concentrations, degreasing operations were most likely located historically somewhere near this pool. The leaching pool apparently is within the area identified as the "Lunch Room" on your figure. Please let me know if this presents a difficulty in investigating this pool.

If high soil gas readings are detected in any of the grid samples near the "Safety Cage" by the western portion of Building 2, additional borings will be requested around this area later. The western portion of that building would be the most likely source of the solvents that were found in LPH21.

Please address these comments in a revised work plan to be submitted within 30 days of your receipt of this letter. Please do not hesitate to call me at (631) 444-0244 if you have any questions or disagree with these comments.

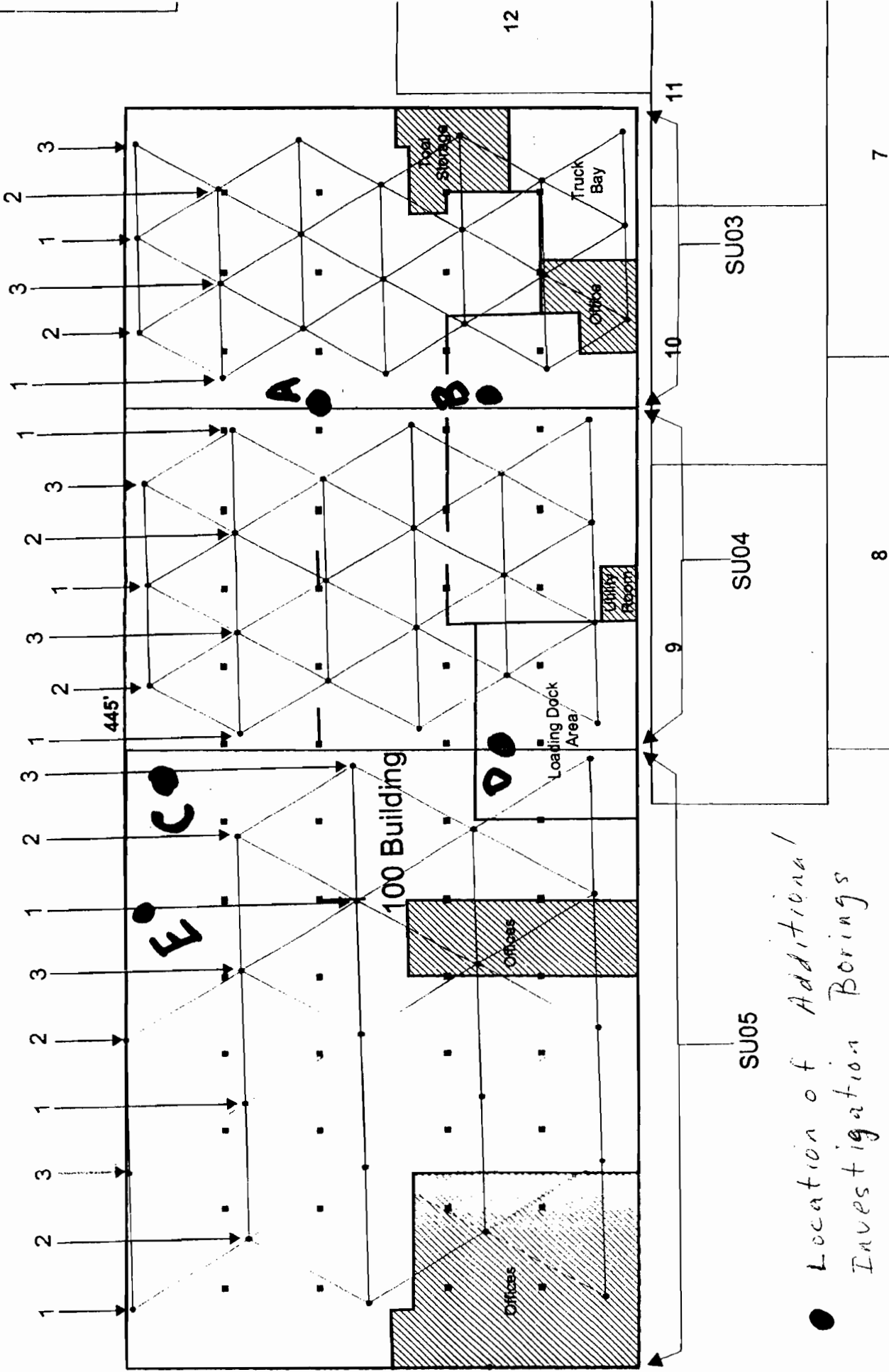
Sincerely,



Robert R. Stewart
Environmental Engineer I

Enclosure

cc: W. Parish
K. Carpenter
J. Riggi
J. Nealon, NYSDOH



● Location of Additional Investigation Borings

7

8

1108500	1108505	1108510	1108515	1108520	1108525
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January 20, 2005

Mr. Robert Stewart
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SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790-2356

Re: **Response to NYSDEC Comments of December 20, 2004 on the
*Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building and
Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building*
Former Sylvania Electric Products Facility, #V00089-1**

Dear Mr. Stewart:

Thank you for your December 20, 2004 response to our November 17, 2004 submittal of the referenced Work Plans. To address your comments, the following responses have been prepared for your consideration. The comment responses are presented below, in full or in part, in the order that they appeared in your letter.

Comment 1: 100 Building - Vertical Sampling Depth

Please clarify ground surface reference point particularly as it relates to the loading dock area of the 100 property. The loading dock floor is approximately four to five feet below the 100 building's floor. The Department wants to ensure that the six foot buffer built into your sampling plan is not lost.

Response: *We are standardizing these borings to a baseline elevation on Site, therefore we will be able to maintain a consistent sampling depth interval applicable to the survey units. Based on this approach, the 6-foot buffer described in the **Vertical Sampling Depth** section of both plans is preserved.*

Comment 2: Soil Gas Sampling

Based on a preliminary analysis of the groundwater sampling results, there may still be undiscovered source areas for chlorinated solvents in the western and central portions of the site. As another tool in identifying the location of these volatile organic compounds, the Department requests that a soil gas sample be collected from each borehole after the proposed shallow samples have been removed.

Mr. Robert Stewart
January 20, 2005
Page 2

Please propose a depth at which to collect these soil gas samples which is somewhere between three feet and ten feet below the building slab. The samples could be analyzed by a PID in a head space sample or by your on-site laboratory, whichever you prefer.

Response: *As part of the standard operating procedures for sample recovery, every soil sample that is recovered is screened for soil gases using a PID as the sampler is opened. If a sample shows indications of volatile organic compounds above 10 parts per million, an additional soil sample is sent to the on-Site laboratory for analysis. The depths of sample recovery are defined within the plans and all sample locations in the Systematic Subsurface Soil Sampling protocol have at least one sample recovered from the 3- to 10-foot depth interval as requested.*

After the analytical data is available, we can evaluate the need for additional information with the NYSDEC.

Comment 3: Additional Investigation Borings Between Survey Units SU03 and SU04 and Between Survey Units SU04 and SU05 for the 100 Building

There is a space between survey units SU04 and SU05 and between SU03 and SU04. It is not necessary to alter the survey units. However, I am requesting five additional investigation borings at the locations shown in the attached figure to give better coverage.

The space between SU04 and SU05 is by western portion of the chemical processing area for the former AEC building on the south portion of the gap and by an historical metal storage tank and stucco building on the north portion of the gap. Groundwater data suggests the presence of potential nickel and VOC source areas near this gap. The nickel and radiological contamination found in cell 9 probably extends to under the 100 building.

The space between SU03 and SU04 is just north of the process tank found in the northwest corner of cell 10 and is near the eastern wall of the former AEC building. The piping leading from the 100 building to the former reservoir in the rear of the 100 property apparently originated near the northeast corner of the AEC building. Based on an old figure, there was a pump in the cellar of this portion of the building which probably was used to pump water to the reservoir. This area is of interest due to contamination discovered in the reservoir. Additionally, the source of the radiological contamination in MW-2, which is downgradient of this area, has apparently not been found yet.

It is for the above reasons that I am requesting the additional investigation borings.

Response: *We will add Borings A and B to SU03. Boring D will be added as a biased sample location in SU04 since it will not fall into the Systematic Sampling Protocol. Borings C and E will be added to SU05. The borings will be renamed to comply with the existing boring nomenclature used for the survey units, assigned to appropriate sampling interval columns, and sampled in accordance with the Systematic Sampling Protocol.*

Mr. Robert Stewart
January 20, 2005
Page 3

Comment 4: Historical Leaching Pool by the 140 Building Loading Dock

There is one historical leaching reportedly located inside the 140 building, just west of the loading dock, that was not investigated in the recent leaching pool investigation. It is just west of the former Building 2, the earlier commercial manufacturing building, and just east of a two-story frame building which I believe to be the "farm house". The farm house may have been used historically for machining operations. In SU07 for the 140 building, the survey point in the southeast corner of this survey unit comes very near the location of this former leaching pool. Please move this survey point slightly so that is located over the expected center of this pool. This pool must be investigated due to the high concentrations of PCE that were detected in nearby LPH21. Since the sediment sample in LPH21 detected percent concentrations, degreasing operations were most likely located historically somewhere near this pool. The leaching pool apparently is within the area identified as the "Lunch Room" on your figure. Please let me know if this presents a difficulty in investigating this pool.

If high soil gas readings are detected in any of the grid samples near the "Safety Cage" by the western portion of Building 2, additional borings will be requested around this area later. The western portion of that building would be the most likely source of the solvents that were found in LPH21.

Response: *This historic leaching pool, designated as LPH34, will be added and evaluated under the LPH Sampling Protocol. Reasonable attempts will be made to locate LPH34 and sample as many locations as possible using the LPH Sampling Protocol; however, several obstructions are present in this area (lunch room, loading dock, safety cage, equipment, etc.) that may impede access. Please note that we do not have any information regarding the historical use of this LPH.*

This letter will be attached as an addendum to the referenced work plans. We plan to begin work described in the subject work plans in mid January.

If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at (214) 724-2506 or via facsimile (972) 719-0065.

Sincerely,



Jean M. Agostinelli
Vice President and Controller

Mr. Robert Stewart
January 20, 2005
Page 4

Walter Perish
Division of Environmental Remediation,
Region One
New York State Department of
Environmental Conservation
Building 40 – SUNY
Stony Brook, NY 11790-0248

Jerry Riggi
Division of Solid and Hazardous Materials
Bureau of Hazardous Waste & Radiation
Management
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-7255

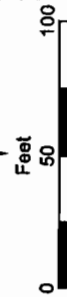
Jacquelyn Nealon
Bureau of Environmental Exposure
Investigation
New York State Department of Health
Flannegan Square, Rm 300
547 River Street
Troy, NY 12180-2216

Kevin Carpenter
Division of Environmental Remediation
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-7015

Figure 1
Survey Units - Beneath
the 100 Building

Legend

- Random Sample Starting Points
- Sample Locations
- Sample Grid Layout
- Doors
- Structure Columns Building 100
- Class 1 Survey Unit
- Class 2 Survey Unit
- ▨ Not Readily Accessible to Drilling Equipment
- Cell Boundaries
- Cell Number
- 1 Above Vertical Sampling Start Interval
- 2 Above Vertical Sampling Start Interval
- 3 Above Vertical Sampling Start Interval
- A Location of Additional Investigation Borings Requested by NYDEC



Preparation Information:
 State Plane Projection
 North American Datum 1983
 UTM Zone 18Q
 UTM Easting 182000
 UTM Northing 4500000

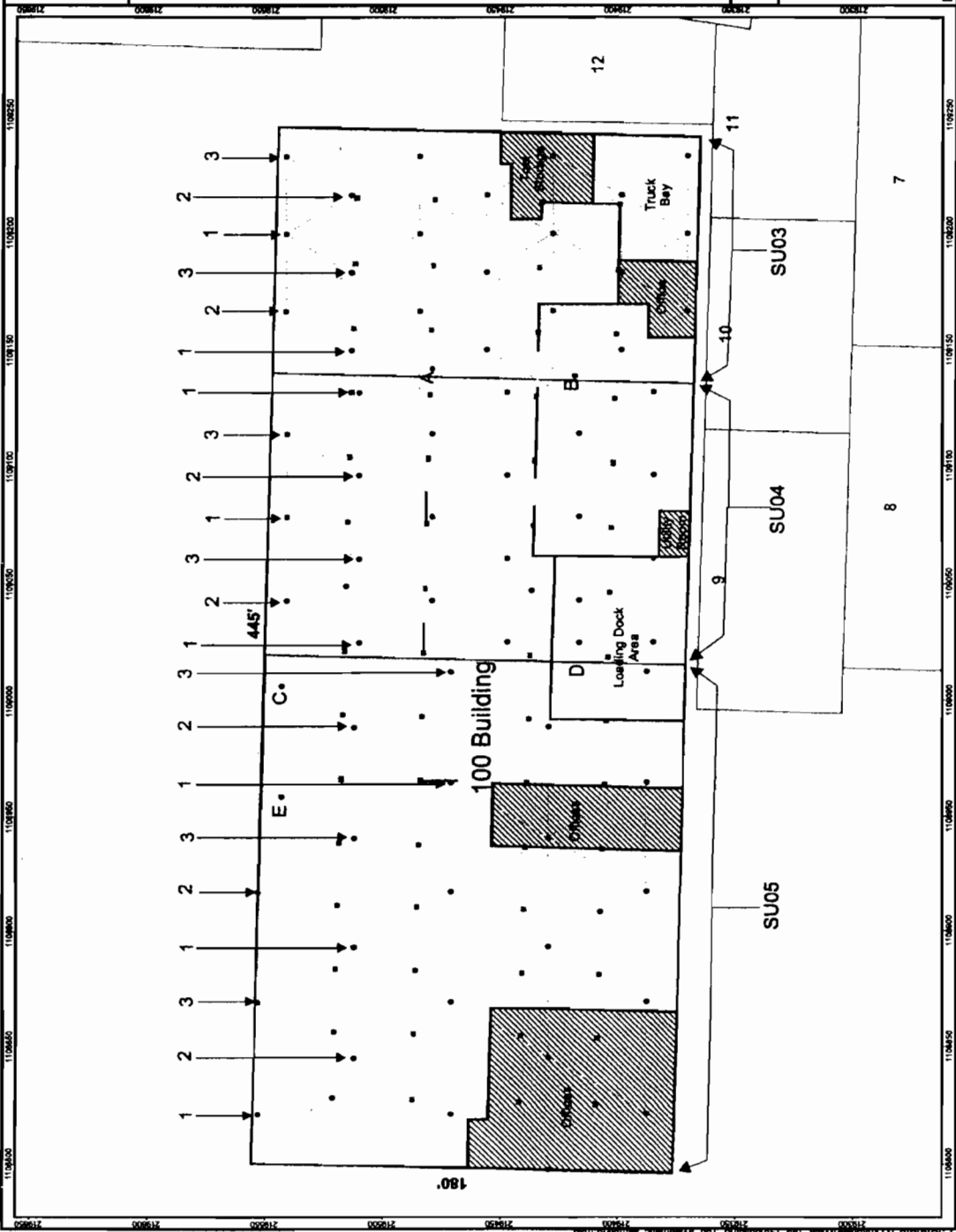
OTE OPERATIONS SUPPORT INCORPORATED
 HICKSVILLE, NEW YORK

ENVIROCON
 Environmental Remediation Services



DESTINY
 RESOURCES, INC.

DRI ID: 1008-H6246
 January 20, 2005

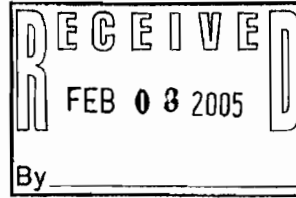


**New York State Department of Environmental Conservation
Division of Environmental Remediation, Region One**

Building 40 - SUNY, Stony Brook, New York 11790-2356
Phone: (631) 444-0240 • FAX: (631) 444-0248
Website: www.dec.state.ny.us



Erin M. Crotty
Commissioner



January 31, 2005

Jean Agostinelli
Vice President - Controller
GTE Operations Support, Inc.
600 Hidden Ridge Drive (HQE03E75)
Irving, TX 75038

Re: January 20, 2005 Response to NYSDEC Comments of December 20, 2004 on the SSSAP
Beneath the 140 Building and the SSSAP Beneath the 100 Building
Former Sylvania Electric Products Facility; Site # V00089-1

Dear Ms. Agostinelli:

As indicated in my conference call with your staff, the proposed changes to the Subsurface Soil Sampling and Analysis Plan (SSSAP) Beneath the 140 Building, November 2004 and the SSSAP Beneath the 100 Building, November 2004, as stated in your letter dated January 20, 2005 are acceptable. With a copy of the January 20, 2005 letter attached to each of the November 2004 SSSA Plans, these documents are both hereby approved.

As you know, the Department requested that a soil gas survey be performed in conjunction with the two investigations noted above. However, your staff indicated that it would be difficult to add this sampling to the proposed work. Instead, you have committed to perform a soil gas survey on a grid later to evaluate soil gases beneath the buildings. I am attaching a copy of an e-mail message documenting your commitment to perform the soil gas survey.

You may proceed with these investigations. I am requesting that after you complete each borehole that you backfill them with clean, sandy fill of the similar porosity in each boring. If this presents any difficulties to you, please let me know. After you have completed each survey unit, the Department plans to perform a preliminary soil gas survey for each survey unit by inserting a soil gas probe into the backfilled soils to approximately 31 inches in each borehole. The soils will be pushed down around the probe at the surface to prevent drawing in vapors from above the borehole. The soil probe will be connected to an HNu with a 10.2 eV probe calibrated to benzene. Peak and steady-state soil gas readings will be recorded. The purpose of these preliminary soil gas surveys for SU-03 through SU-07 is to help determine the grid spacing and analytical requirements for the subsequent soil gas surveys for these survey units that you will perform later. It is also expected that the results of the preliminary soil gas surveys will help the Department with its interpretation of the results of your soil sampling for volatile organic compounds. Of course, you may oversee this sampling and I'll share my results with you.

The Department realizes that the preliminary soil gas surveys performed by the Department are just a preliminary screening tool. Consequently, no formal report will be prepared.

If you have any questions, please do not hesitate to call me.

Sincerely,



Robert R. Stewart
Environmental Engineer I

Enclosure

cc: W. Parish
J. Riggi
K. Carpenter
J. Nealon, NYSDOH

From: <elie.a.ghannoum@verizon.com>
To: "Robert Stewart" <rrstewar@gw.dec.state.ny.us>, "Walter Parish" <wjparish@gw.dec.state.ny.us>
Date: 1/27/05 1:38PM
Subject: January 26, 05 Conference Call

Bob, per our conference call as of yesterday (1/26/05) with you and Walter, if the Department feels that it is necessary to conduct soil vapor sampling within the survey units 3 through 7 of the 140 and 100 Buildings once the soil investigation beneath the Buildings are completed and the results of the investigation are presented to the Department, GTEOSI will submit to NYSDEC a sampling grid pattern and established protocol by which such sampling will be conducted. With the understanding as described above, GTEOSI, with your approval, will commence the work as outlined in our letter to you dated November 17, 2004 and our January 20, 2005 response to your comments of December 20, 2004 on the Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building and Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building.

Thanks

Elie

(Embedded image moved to file:
pic06903.gif)

CC: "Lucky Tabor" <LTabor@envirocon.com>, <Rob_Brathovde@URSCorp.com>, <Carol_Scholl@URSCorp.com>, <Michael_Ander@URSCorp.com>, <jean.agostinelli@verizon.com>

SU06 MARSSIM Evaluation Results Using Severn Trent Laboratories, Inc. Sample Results

SU06, Intervals 1, 2, and 3 passed the MARSSIM¹ Sign Test and the associated soils are considered releasable from a radiological perspective. These intervals consist of SP samples collected and analyzed in the 0 to 3-m, 3 to 6-m, and 6 to 9-m depth ranges, respectively. The MARSSIM protocol uses a non-parametric statistical analysis test that evaluates all of the SP sample results for a single interval separately. Therefore, there were three independent evaluations within the three-dimensional footprint of SU06.

There were a total of 15 SP sample results in Interval 1, Interval 2, and Interval 3, respectively. All samples were analyzed for radiological analytes of interest (Th-232, U-234, and U-238) for purposes of this evaluation. The sample results for each of the samples are presented in **Table 2** and are the results reported by STL.

The charts on the subsequent pages of this appendix were generated by the COMPASS² computer code. As shown on the first page of the COMPASS Surface Soil Survey Plan for Intervals 1 and 2, a minimum of 13 soil sample analyses were sufficient for the MARSSIM-based analysis to be statistically significant. As shown on the first page of the COMPASS Surface Soil Survey Plan for Interval 3, a minimum of 14 soil sample analyses were sufficient for the MARSSIM-based analysis to be statistically significant. As stated earlier, this MARSSIM-based analysis for Intervals 1, 2, and 3 in this SU were each based on 15 soil sample analyses, respectively.

Included in the assessment of SU06 are three reports. The cover report is titled *Site Report* and provides information the radiological contaminants and their respective DCGLw³ (the Site cleanup levels specified in the Work Plan) used in the evaluation of each interval.

Each interval assessment is comprised of two COMPASS reports. The first report is titled *Surface Soil Survey Plan*. This report contains information that was used in the planning phase of the survey or soil sample collection. This information was based on the Site's cleanup levels and cell parameters or is information that was derived from these parameters. The last section of this report contains information that, by design, was an estimate of the average concentration and the standard deviation anticipated to be present in the survey unit interval for each radionuclide. The values in this report were based on the actual average concentration and standard deviation of each radionuclide as calculated from the sample results.

The second report is titled *DQA Surface Soil Report*. This report presents the results of performing a non-parametric statistical analysis called the Sign Test on the samples results. On the first page of this report is given the *Assessment Conclusion* which is *Reject Null Hypothesis (Survey Unit PASSES)* for all three intervals. The only other possible conclusion is if the survey unit did not pass. Other information presented in the report is either input information that is echoed back in the report or is information related to the performance of the Sign Test. Also included in the report is a table titled *Basic Statistical Quantities Summary*. The average or mean SOR is shown in this table. This SOR value is high (conservative) by approximately a factor of 2 due to the use of individual uranium radionuclides in the evaluation and the limitations on the flexibility of this version of COMPASS. The information in this table supports the earlier stated conclusion as it demonstrates that the average concentration of radiological contaminants is significantly below the cleanup levels.

¹ NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), August 2000.

² COMPASS Code Version 1.0.0 was developed under the sponsorship of the U. S. Nuclear Regulatory Commission for implementing the MARSSIM in support of the decommissioning license termination rule (10 CFR Part 20, Subpart E).

³ For these purposes, the term DCGL is synonymous with the term cleanup level.



Site Report

Site Summary

Site Name: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell

Contaminant Summary

NOTE: Surface soil DCGLw units are pCi/g.
Building surface DCGLw units are dpm/100 cm².

Contaminant	Type	DCGLw	Screening Value Used?	Area (m ²)	Area Factor
Th-232	Surface Soil	2.80	No	1	12.3
				3	6.08
				10	3.12
				30	2.24
				100	1.75
				300	1.47
				1,000	1.05
				3,000	1.03
				10,000	1
U-234	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1
U-238	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1

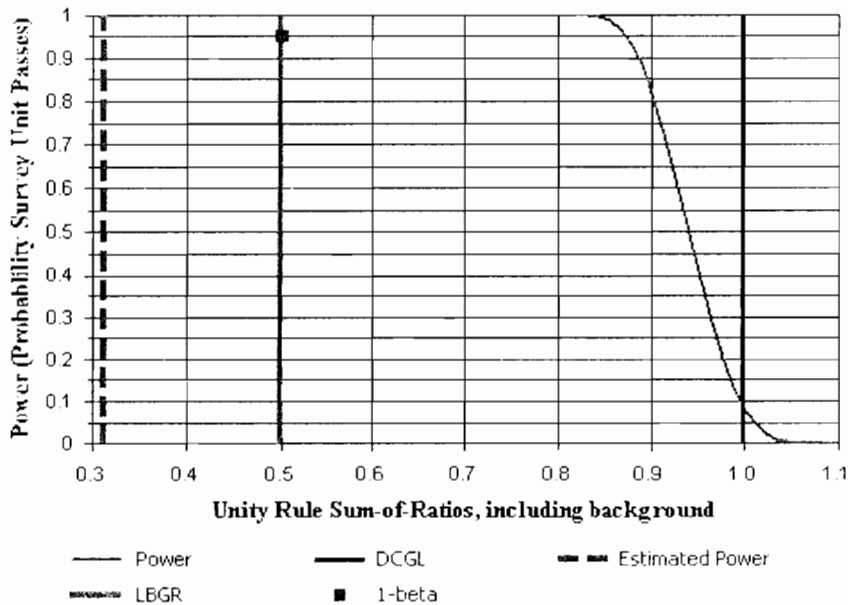


Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU06 Interval 1 01		
Comments:	SU06 Interval 1 Run 01		
Area (m ²):	1,635	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.12
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.31
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve





Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

Contaminant	Survey Unit Estimate (Mean \pm 1-Sigma) (pCi/g)	Reference Area Estimate (Mean \pm 1-Sigma) (pCi/g)
	Th-232	0.631 \pm 0.278
U-234	2.462 \pm 2.291	N/A
U-238	1.864 \pm 1.976	N/A

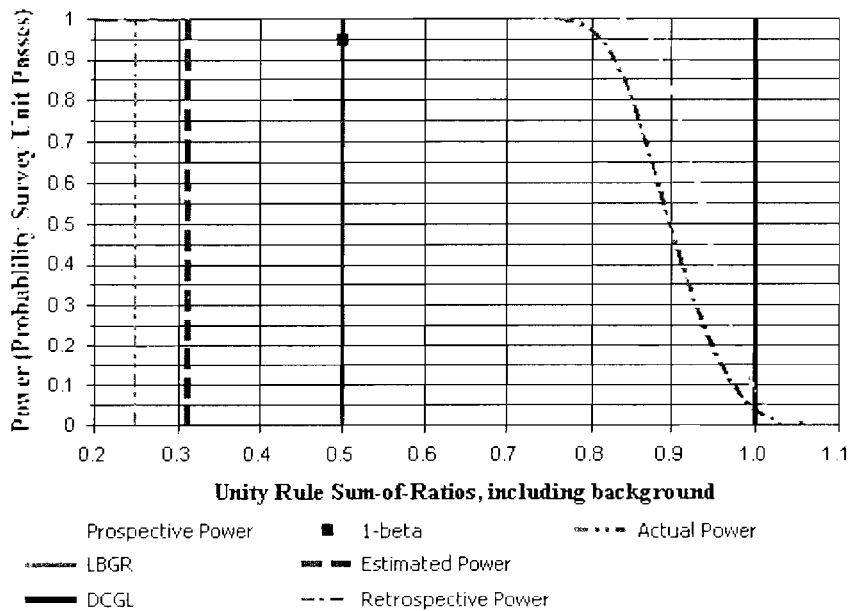


DQA Surface Soil Report

Assessment Summary

Site: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell
Survey Unit Name: SU06 Interval 1 01
Report Number: 1
Survey Unit Samples: 15
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve





DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
27977	S	0.47	2.44	1.19
26851	S	0.83	2.37	1.87
28398	S	0.58	0.5	0.61
27682	S	0.97	7.4	6.06
28278	S	0.64	5.19	1.93
27060	S	0.72	5.76	5.42
28342	S	0.38	1.08	0.77
27318	S	0.65	0.69	0.41
27882	S	0.36	1.91	0.83
28205	S	0.79	3.19	2.33
27776	S	1.07	4.62	4.89
27421	S	1.08	0.75	0.76
28107	S	0.42	0.42	0.38
27593	S	0.22	0.29	0.27
27502	S	0.29	0.32	0.23

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
27977	S	0.24
26851	S	0.38
28398	S	0.23
27682	S	0.62
28278	S	0.37
27060	S	0.48
28342	S	0.17
27318	S	0.25
27882	S	0.18
28205	S	0.39
27776	S	0.57
27421	S	0.42
28107	S	0.17
27593	S	0.09
27502	S	0.11



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=13
Mean (SOR)	0.31	N/A	0.31
Median (SOR)	0.25	N/A	N/A
Std Dev (SOR)	0.16	N/A	0.12
High Value (SOR)	0.62	N/A	N/A
Low Value (SOR)	0.09	N/A	N/A

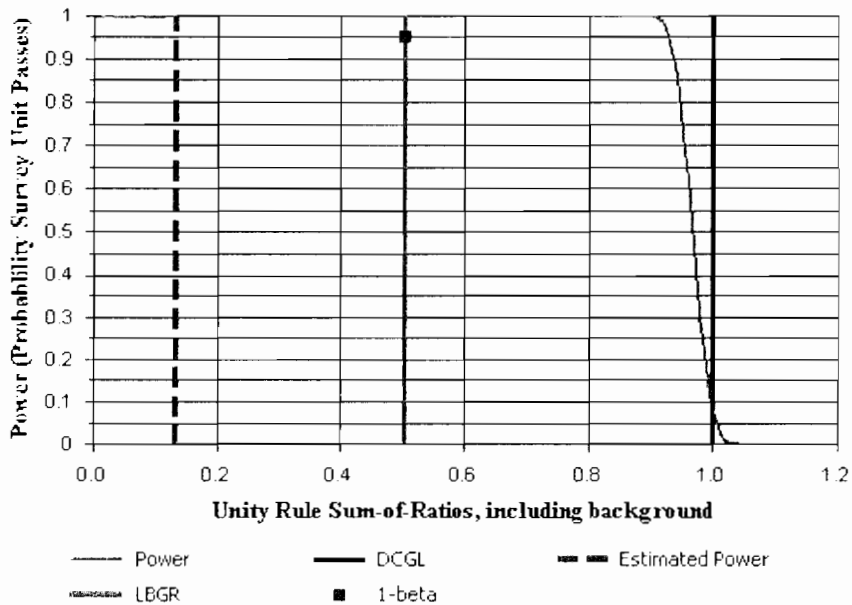


Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU06 Interval 2 01		
Comments:	SU06 Interval 2 Run 01		
Area (m ²):	1,635	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.07
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.13
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve





Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

Contaminant	Survey Unit Estimate (Mean \pm 1-Sigma) (pCi/g)	Reference Area Estimate (Mean \pm 1-Sigma) (pCi/g)
Th-232	0.224 \pm 0.075	N/A
U-234	1.788 \pm 0.945	N/A
U-238	0.945 \pm 2.837	N/A

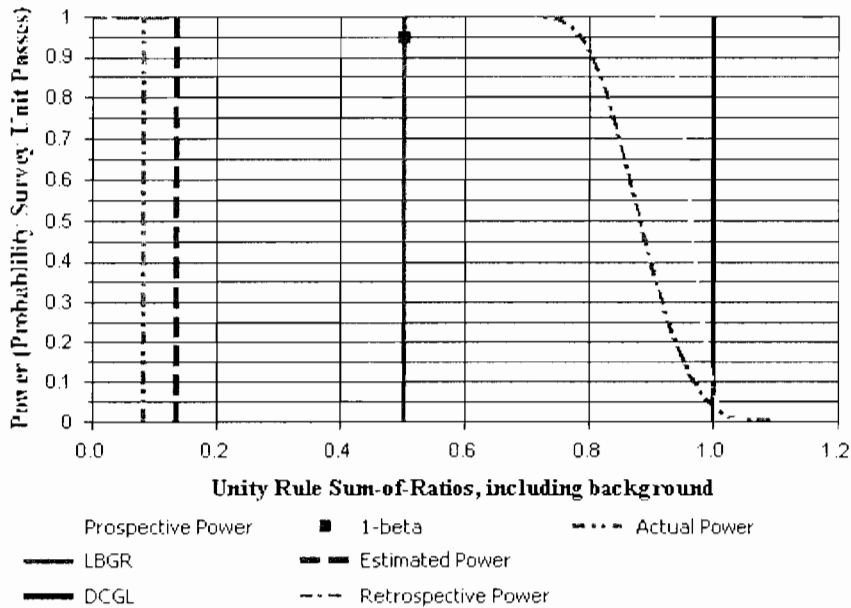


DQA Surface Soil Report

Assessment Summary

Site: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell
Survey Unit Name: SU06 Interval 2 01
Report Number: 1
Survey Unit Samples: 15
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve





DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
28008	S	0.42	0.32	0.33
26873	S	0.27	0.24	0.3
28413	S	0.25	0.23	0.24
27705	S	0.27	0.31	0.24
28299	S	0.21	0.22	0.22
27082	S	0.17	0.21	0.24
28359	S	0.19	0.19	0.22
27335	S	0.26	0.21	0.21
27911	S	0.15	0.24	0.18
28223	S	0.17	0.21	0.16
27791	S	0.26	0.16	0.18
27436	S	0.19	0.2	0.17
28144	S	0.28	23.8	11.2
27609	S	0.1	0.13	0.13
27528	S	0.17	0.14	0.15

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28008	S	0.16
26873	S	0.11
28413	S	0.1
27705	S	0.11
28299	S	0.08
27082	S	0.07
28359	S	0.08
27335	S	0.1
27911	S	0.06
28223	S	0.07
27791	S	0.1
27436	S	0.07
28144	S	0.8
27609	S	0.04
27528	S	0.07



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=13
Mean (SOR)	0.13	N/A	0.13
Median (SOR)	0.08	N/A	N/A
Std Dev (SOR)	0.19	N/A	0.07
High Value (SOR)	0.80	N/A	N/A
Low Value (SOR)	0.04	N/A	N/A

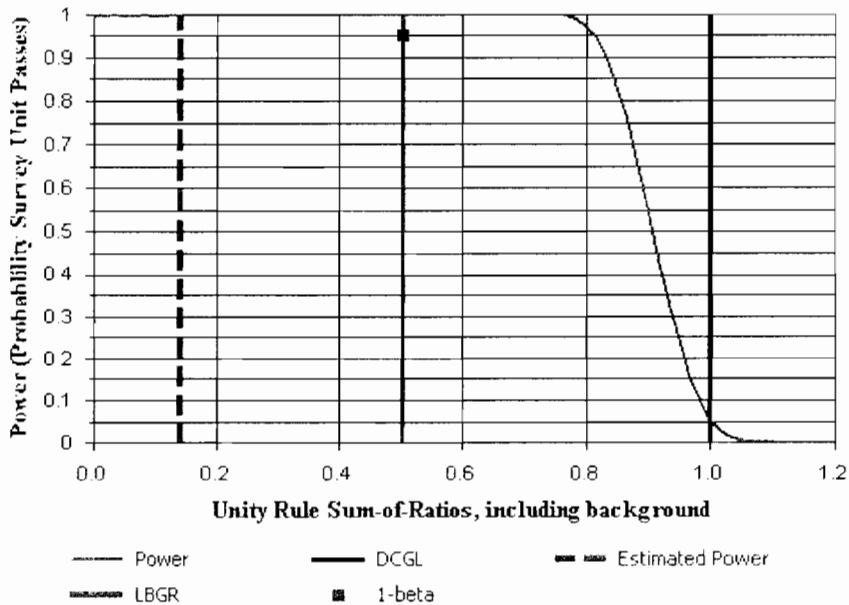


Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU06 Interval 3 01		
Comments:	SU06 Interval 3 Run 01		
Area (m ²):	1,635	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.17
DCGL (SOR):	1	Sample Size (N):	14
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.14
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve





Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

Contaminant	Survey Unit Estimate (Mean \pm 1-Sigma) (pCi/g)	Reference Area Estimate (Mean \pm 1-Sigma) (pCi/g)
	Th-232	0.218 \pm 0.055
U-234	2.125 \pm 7.435	N/A
U-238	1.167 \pm 3.827	N/A

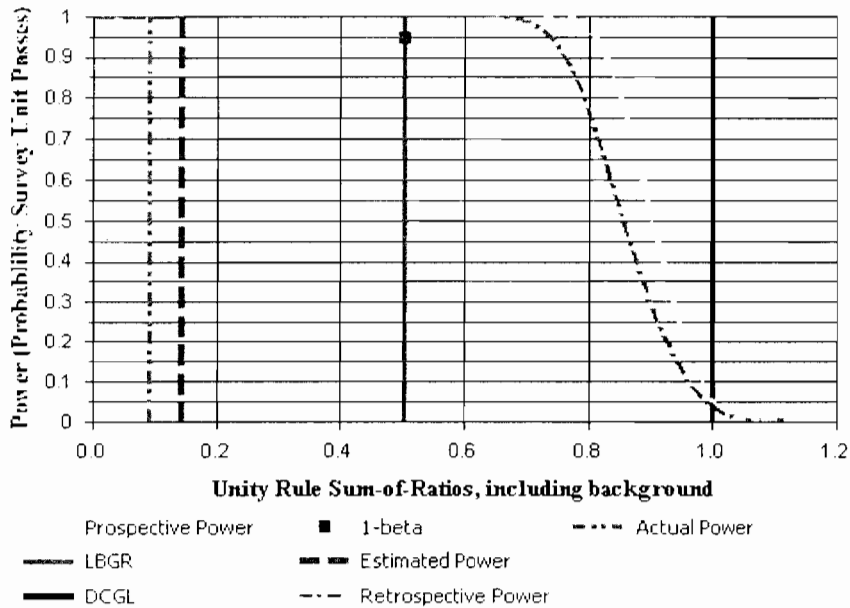


DQA Surface Soil Report

Assessment Summary

Site: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell
Survey Unit Name: SU06 Interval 3 01
Report Number: 1
Survey Unit Samples: 15
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve





DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
28017	S	0.14	0.18	0.21
26899	S	0.24	0.22	0.23
28420	S	0.22	0.18	0.17
27720	S	0.25	0.17	0.18
28318	S	0.3	0.19	0.14
27094	S	0.33	0.32	0.33
28371	S	0.16	0.2	0.13
27365	S	0.19	0.18	0.18
27931	S	0.26	0.2	0.17
28257	S	0.18	0.3	0.16
27816	S	0.17	0.13	0.14
27453	S	0.26	0.27	0.18
28171	S	0.24	29	15
27635	S	0.18	0.16	0.13
27555	S	0.17	0.16	0.17

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28017	S	0.06
26899	S	0.09
28420	S	0.09
27720	S	0.1
28318	S	0.11
27094	S	0.13
28371	S	0.06
27365	S	0.07
27931	S	0.1
28257	S	0.07
27816	S	0.07
27453	S	0.1
28171	S	0.97
27635	S	0.07
27555	S	0.07



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=14
Mean (SOR)	0.14	N/A	0.14
Median (SOR)	0.09	N/A	N/A
Std Dev (SOR)	0.23	N/A	0.17
High Value (SOR)	0.97	N/A	N/A
Low Value (SOR)	0.06	N/A	N/A

SU07 MARSSIM Evaluation Results Using Severn Trent Laboratories, Inc. Sample Results

SU07, Intervals 1, 2, and 3 passed the MARSSIM¹ Sign Test and the associated soils are considered releasable from a radiological perspective. These intervals consist of SP samples collected and analyzed in the 0 to 3-m, 3 to 6-m, and 6 to 9-m depth ranges, respectively. The MARSSIM protocol uses a non-parametric statistical analysis test that evaluates all of the SP sample results for a single interval separately. Therefore, there were three independent evaluations within the three-dimensional footprint of SU07.

There were a total of 22 SP sample results in Interval 1, Interval 2, and Interval 3, respectively. All samples were analyzed for radiological analytes of interest (Th-232, U-234, and U-238) for purposes of this evaluation. The sample results for each of the samples are presented in **Table 2** and are the results reported by STL.

The charts on the subsequent pages of this appendix were generated by the COMPASS² computer code. As shown on the first page of the COMPASS Surface Soil Survey Plan for Interval 1, a minimum of 15 soil sample analyses were sufficient for the MARSSIM-based analysis to be statistically significant. As shown on the first page of the COMPASS Surface Soil Survey Plan for Intervals 2 and 3, a minimum of 13 soil sample analyses were sufficient for the MARSSIM-based analyses to be statistically significant. As stated earlier, this MARSSIM-based analysis for Intervals 1, 2, and 3 in this SU were each based on 22 soil sample analyses, respectively.

Included in the assessment of SU07 are three reports. The cover report is titled *Site Report* and provides information the radiological contaminants and their respective DCGLw³ (the Site cleanup levels specified in the Work Plan) used in the evaluation of each interval.

Each interval assessment is comprised of two COMPASS reports. The first report is titled *Surface Soil Survey Plan*. This report contains information that was used in the planning phase of the survey or soil sample collection. This information was based on the Site's cleanup levels and cell parameters or is information that was derived from these parameters. The last section of this report contains information that, by design, was an estimate of the average concentration and the standard deviation anticipated to be present in the survey unit interval for each radionuclide. The values in this report were based on the actual average concentration and standard deviation of each radionuclide as calculated from the sample results.

The second report is titled *DQA Surface Soil Report*. This report presents the results of performing a non-parametric statistical analysis called the Sign Test on the samples results. On the first page of this report is given the *Assessment Conclusion* which is *Reject Null Hypothesis (Survey Unit PASSES)* for all three intervals. The only other possible conclusion is if the survey unit did not pass. Other information presented in the report is either input information that is echoed back in the report or is information related to the performance of the Sign Test. Also included in the report is a table titled *Basic Statistical Quantities Summary*. The average or mean SOR is shown in this table. This SOR value is high (conservative) by approximately a factor of 2 due to the use of individual uranium radionuclides in the evaluation and the limitations on the flexibility of this version of COMPASS. The information in this table supports the earlier stated conclusion as it demonstrates that the average concentration of radiological contaminants is significantly below the cleanup levels.

¹ NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), August 2000.

² COMPASS Code Version 1.0.0 was developed under the sponsorship of the U. S. Nuclear Regulatory Commission for implementing the MARSSIM in support of the decommissioning license termination rule (10 CFR Part 20, Subpart E).

³ For these purposes, the term DCGL is synonymous with the term cleanup level.



Site Report

Site Summary

Site Name: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell

Contaminant Summary

NOTE: Surface soil DCGLw units are pCi/g.
Building surface DCGLw units are dpm/100 cm²

Contaminant	Type	DCGLw	Screening Value Used?	Area (m ²)	Area Factor
Th-232	Surface Soil	2.80	No	1	12.3
				3	6.08
				10	3.12
				30	2.24
				100	1.75
				300	1.47
				1,000	1.05
				3,000	1.03
				10,000	1
U-234	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1
U-238	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1

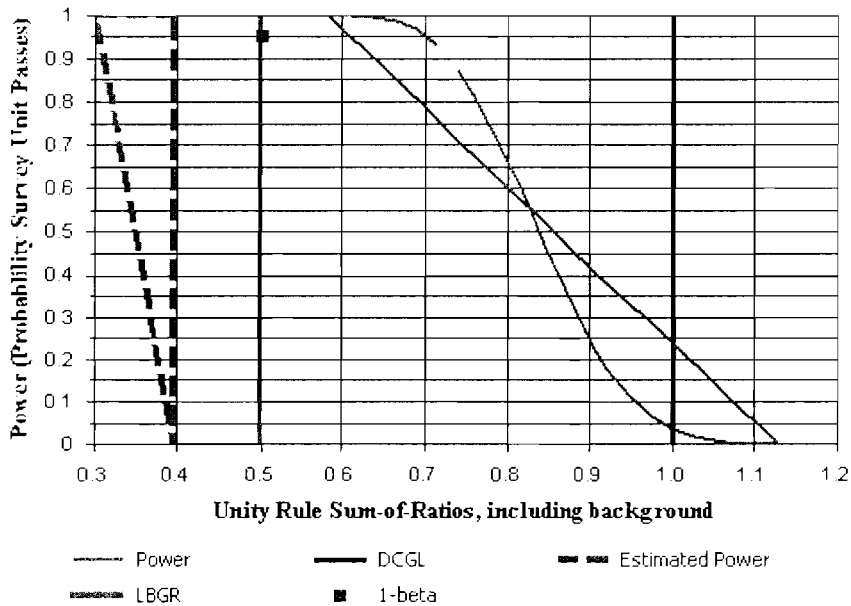


Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU07 Interval 1 01		
Comments:	SU07 Interval 1 Run 01		
Area (m ²):	1,411	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.26
DCGL (SOR):	1	Sample Size (N):	15
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.4
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve





Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

Contaminant	Survey Unit Estimate (Mean \pm 1-Sigma) (pCi/g)		Reference Area Estimate (Mean \pm 1-Sigma) (pCi/g)	
Th-232		0.513 \pm 0.206		N/A
U-234		6.279 \pm 10.16		N/A
U-238		4.335 \pm 7.145		N/A

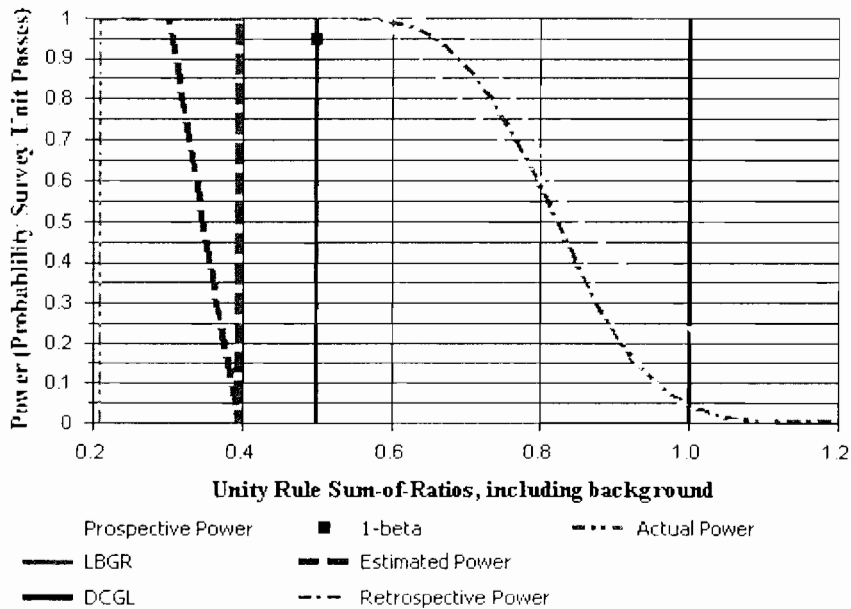


DQA Surface Soil Report

Assessment Summary

Site: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell
Survey Unit Name: SU07 Interval 1 01
Report Number: 1
Survey Unit Samples: 22
Reference Area Samples: 0
Test Performed: Sign Test Result: Pass
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: ***Reject Null Hypothesis (Survey Unit PASSES)***

Retrospective Power Curve





DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
29454	S	0.39	0.53	0.47
29209	S	0.73	15.3	8.8
29346	S	0.43	26.8	26.6
28746	S	0.76	24.1	11.6
29656	S	0.56	9.5	9.3
29067	S	0.85	2.69	2.63
29545	S	0.69	18.5	18.9
28902	S	0.93	32.4	10.3
29256	S	0.78	0.62	0.55
29717	S	0.57	3.04	2.7
29030	S	0.37	0.43	0.41
29403	S	0.38	0.48	0.53
28517	S	0.52	0.97	0.29
29620	S	0.46	0.41	0.4
28969	S	0.57	0.39	0.32
29306	S	0.36	0.32	0.3
29791	S	0.18	0.22	0.01
29127	S	0.39	0.3	0.22
28456	S	0.3	0.29	0.29
29577	S	0.2	0.23	0.19
28844	S	0.36	0.24	0.26
29500	S	0.52	0.38	0.28

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
29454	S	0.16
29209	S	0.74
29346	S	1.22
28746	S	0.99
29656	S	0.58
29067	S	0.41
29545	S	0.99
28902	S	1.19
29256	S	0.3
29717	S	0.32
29030	S	0.15
29403	S	0.16
28517	S	0.21
29620	S	0.18
28969	S	0.22
29306	S	0.14
29791	S	0.07
29127	S	0.15



DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28456	S	0.12
29577	S	0.08
28844	S	0.14
29500	S	0.2



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	22	N/A	N=15
Mean (SOR)	0.40	N/A	0.4
Median (SOR)	0.21	N/A	N/A
Std Dev (SOR)	0.38	N/A	0.26
High Value (SOR)	1.22	N/A	N/A
Low Value (SOR)	0.07	N/A	N/A

Statistical Test Summary

S+:	20
Critical Value:	15
Result:	Pass

Data	DCGLw - Data	Sign
0.16	0.84	+
0.74	0.26	+
1.22	-0.22	-
0.99	0.01	+
0.58	0.42	+
0.41	0.59	+
0.99	0.01	+
1.19	-0.19	-
0.3	0.70	+
0.32	0.68	+
0.15	0.85	+
0.16	0.84	+
0.21	0.79	+
0.18	0.82	+
0.22	0.78	+
0.14	0.86	+
0.07	0.93	+
0.15	0.85	+
0.12	0.88	+
0.08	0.92	+
0.14	0.86	+
0.2	0.80	+

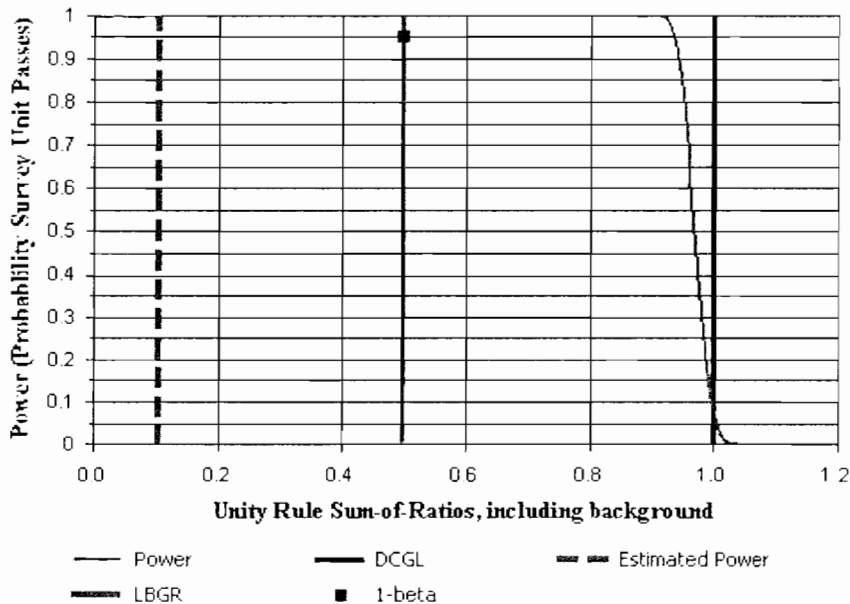


Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU07 Interval 2 01		
Comments:	SU07 Interval 2 Run 01		
Area (m ²):	1,411	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.06
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.1
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve





Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

Contaminant	Survey Unit Estimate (Mean \pm 1-Sigma) (pCi/g)	Reference Area Estimate (Mean \pm 1-Sigma) (pCi/g)
Th-232	0.259 \pm 0.167	N/A
U-234	0.27 \pm 0.121	N/A
U-238	0.247 \pm 0.087	N/A

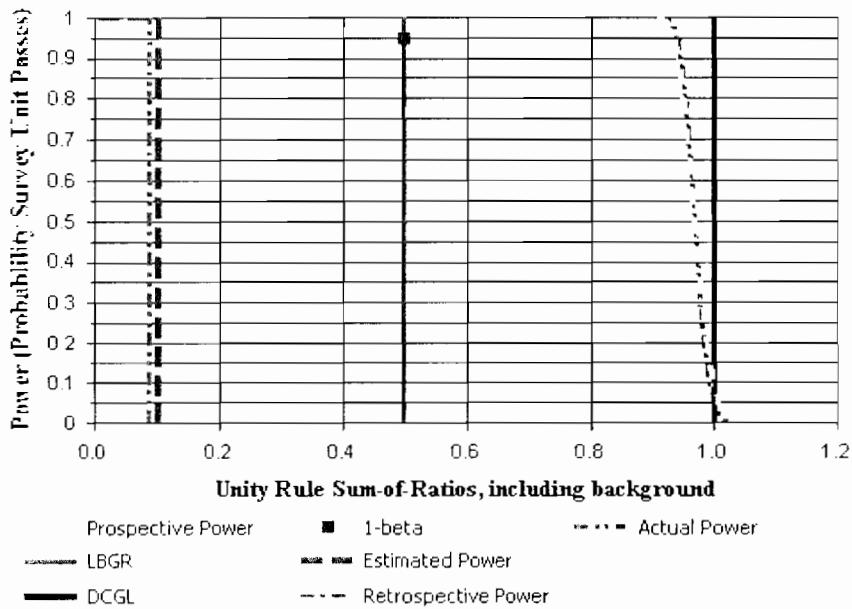


DQA Surface Soil Report

Assessment Summary

Site: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell
Survey Unit Name: SU07 Interval 2 01
Report Number: 1
Survey Unit Samples: 22
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve





DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
29463	S	0.74	0.64	0.46
29222	S	0.22	0.32	0.3
29355	S	0.15	0.34	0.3
28763	S	0.21	0.4	0.3
29677	S	0.21	0.24	0.25
29085	S	0.37	0.39	0.32
29553	S	0.25	0.42	0.39
28916	S	0.29	0.31	0.34
29269	S	0.25	0.3	0.27
29732	S	0.22	0.27	0.29
29039	S	0.73	0.27	0.26
29416	S	0.18	0.25	0.22
28525	S	0.27	0.26	0.21
29636	S	0.22	0.25	0.18
28979	S	0.3	0.23	0.23
29320	S	0.18	0.16	0.19
29814	S	0.12	0.15	0.11
29144	S	0.12	0.14	0.16
28475	S	0.22	0.17	0.23
29586	S	0.15	0.22	0.13
28858	S	0.1	0.11	0.12
29516	S	0.18	0.12	0.18

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
29463	S	0.29
29222	S	0.09
29355	S	0.07
28763	S	0.09
29677	S	0.08
29085	S	0.15
29553	S	0.11
28916	S	0.12
29269	S	0.1
29732	S	0.09
29039	S	0.27
29416	S	0.07
28525	S	0.11
29636	S	0.09
28979	S	0.12
29320	S	0.07
29814	S	0.05
29144	S	0.05



DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28475	S	0.09
29586	S	0.06
28858	S	0.04
29516	S	0.07



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	22	N/A	N=13
Mean (SOR)	0.10	N/A	0.1
Median (SOR)	0.09	N/A	N/A
Std Dev (SOR)	0.06	N/A	0.06
High Value (SOR)	0.29	N/A	N/A
Low Value (SOR)	0.04	N/A	N/A

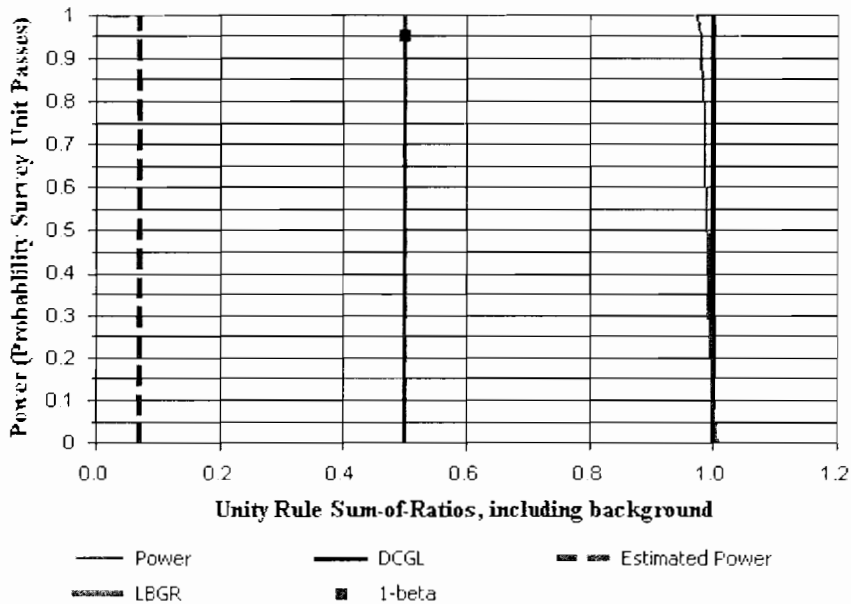


Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU07 Interval 3 02		
Comments:	SU07 Interval 3 Run 02		
Area (m ²):	1,411	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.02
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.07
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve





Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

Contaminant	Survey Unit Estimate (Mean \pm 1-Sigma) (pCi/g)	Reference Area Estimate (Mean \pm 1-Sigma) (pCi/g)
Th-232	0.185 \pm 0.052	N/A
U-234	0.193 \pm 0.056	N/A
U-238	0.174 \pm 0.05	N/A

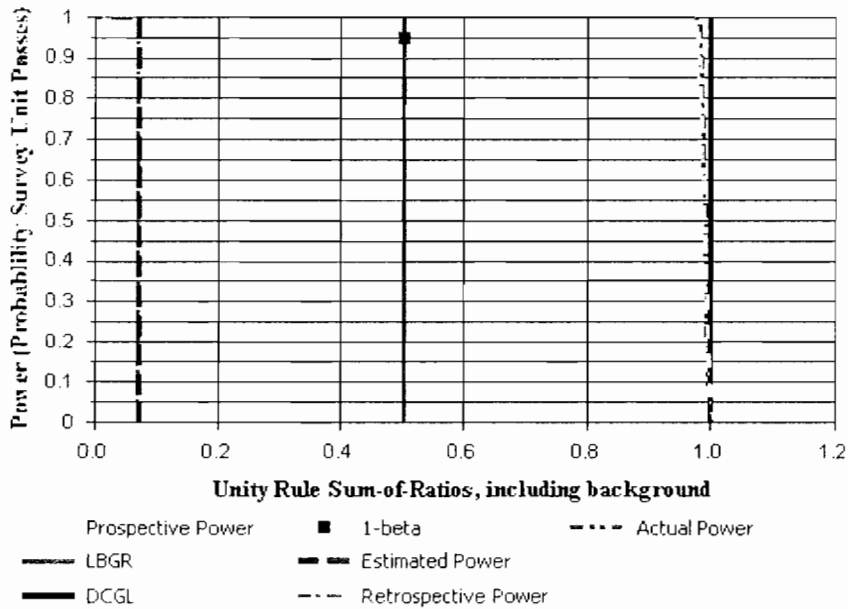


DQA Surface Soil Report

Assessment Summary

Site: GTEOSI - Hicksville Site
Planner(s): Shane Brightwell
Survey Unit Name: SU07 Interval 3 02
Report Number: 1
Survey Unit Samples: 22
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve





DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
29474	S	0.21	0.22	0.15
29237	S	0.14	0.23	0.17
29363	S	0.11	0.19	0.18
28772	S	0.23	0.15	0.14
29692	S	0.17	0.34	0.26
29099	S	0.18	0.22	0.18
29561	S	0.17	0.2	0.18
28929	S	0.13	0.17	0.22
29283	S	0.21	0.32	0.31
29746	S	0.22	0.21	0.16
29047	S	0.11	0.17	0.11
29430	S	0.16	0.2	0.17
28538	S	0.23	0.12	0.17
29649	S	0.15	0.17	0.14
28994	S	0.35	0.23	0.24
29334	S	0.2	0.16	0.18
29833	S	0.18	0.16	0.18
29162	S	0.23	0.17	0.11
28487	S	0.17	0.14	0.14
29599	S	0.23	0.21	0.18
28875	S	0.13	0.11	0.09
29531	S	0.16	0.15	0.16

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
29474	S	0.08
29237	S	0.06
29363	S	0.05
28772	S	0.09
29692	S	0.07
29099	S	0.07
29561	S	0.07
28929	S	0.05
29283	S	0.09
29746	S	0.08
29047	S	0.05
29430	S	0.07
28538	S	0.09
29649	S	0.06
28994	S	0.13
29334	S	0.08
29833	S	0.07
29162	S	0.09



DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28487	S	0.07
29599	S	0.09
28875	S	0.05
29531	S	0.06



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	22	N/A	N=13
Mean (SOR)	0.07	N/A	0.07
Median (SOR)	0.07	N/A	N/A
Std Dev (SOR)	0.02	N/A	0.02
High Value (SOR)	0.13	N/A	N/A
Low Value (SOR)	0.05	N/A	N/A