ALLWEST REMEDIATION Inc.

1201 North Barsten Way
Anaheim, CA 92806

Phone (714) 237-1201
Fax (714) 237-1202

# SUPPLEMENTAL RADIOLOGICAL INVESTIGATION SAMPLING AND ANALYSIS PLAN

Dayton Canyon Site
West Hills, CA

September 27, 2006

**PREPARED FOR:**

Centex Homes
27200 Tourney Road Suite 200
Valencia, CA 91355

**PREPARED BY:**

Allwest Remediation Inc.
1201 North Barsten Way
Anaheim, CA 92806

## TABLE OF CONTENTS


**1.0 INTRODUCTION** ..... 1

**2.0 BACKGROUND** ..... 1

**3.0 PROPOSED SCOPE OF WORK** ..... 2

3.1 Radionuclides of Concern ..... 2
3.2 Proposed Sampling Locations ..... 2
3.3 Sampling Procedures ..... 3

**4.0 SCHEDULE** ..... 4

**5.0 STATEMENT OF LIMITATIONS** ..... 4


Figures:


Figure 1 Site Vicinity Map
Figure 2 Radiological Sampling Summary Results and Background Comparison
Figure 3 Proposed Supplemental Radiological Sampling Locations


Tables:


Table 1 Summary of Radiological Results for Soil Samples
Table 2 Summary of Laboratory Analysis for Sr-90, Pu-238, Pu-239, Pu-240
Table 3 Statistical Evaluation of Laboratory Radiological Data
Table 4 Laboratory Specific Analytical Data Quality Objectives
Table 5 Detailed QA/QC Reporting Requirements


Appendices:


Appendix A Radiological Investigation Report (CD)
Appendix B DTSC Review of Radiological Investigation Report (CD)
Appendix C Laboratory Quality Assurance Plan (CD)

## 1.0 INTRODUCTION

The Centex Sterling Homes Site is located in West Hills, California, just west of the intersection of Roscoe Blvd and Valley Circle in an area known as Dayton Canyon. The Sterling residential development site encompasses approximately 100 acres of undeveloped land. The proposed Sterling Homes site is located approximately 0.5 miles directly east of the eastern boundary of the Rocketdyne/Boeing facility test site, also known as the Santa Susana Field Laboratory (SSFL) in Ventura County, California, as shown in Figure 1. The Rocketdyne/Boeing Facility has been used since 1948 for the research, development and testing of liquid-propellant rocket engines and associated components. The facility was also used by the Department of Energy for nuclear energy research and development, and operated several small scale nuclear reactors onsite.

Due to the proximity of the Sterling Site to the SSFL, a radiological survey was conducted as part of the Preliminary Endangerment Assessment Workplan, to evaluate the radiological conditions at the Sterling Homes site. Allwest Remediation performed a radiological survey, and collected samples for laboratory analysis at a rate of approximately 10 percent of the grids monitored, as described in the workplan approved by DTSC.

The results of the radiological survey and the radiological laboratory analysis are presented in the *June 7, 2006 Radiological Investigation Report* (Appendix A). The *Radiological Investigation Report* was submitted to DTSC for review.

Comments received from DTSC's review of the *Radiological Investigation Report,* indicate additional radiological sampling be performed in areas which may possibly have slightly elevated levels of radioactivity.

The purpose of this Sampling and Analysis Plan is to:

- Present a rationale for the selection of areas for additional radiological sampling.
- Identify the specific areas to be sampled.
- Identify the radio-nuclides to be analyzed for by the laboratory.
- Present the procedures to be used to collect and analyze the samples, and document the collection and laboratory activities.
- Identify the relevant quality assurance and quality control procedures to assure the acceptability of the data collected.

## 2.0 BACKGROUND

The radiological survey was conducted using a Geiger-Mueller survey instrument. During the survey, the highest and lowest exposure rate readings were recorded for each of the 100 foot by 100 foot grid areas shown in Figure 2. The radiological survey was conducted to determine if any of the grid areas were statistically different, prior to conducting soil sampling for radiological analysis. The results of the radiological survey are discussed in more detail in the *Radiological Investigation Report* (Appendix A). The

radiological survey and soil sampling for radiological laboratory analysis were performed as indicated in the *November 22, 2005, Preliminary Endangerment Assessment Workplan*.

Based on the results to the radiological survey, 41 samples were collected for radiological analysis. These samples were collected from the areas shown in Figure 2. The samples were analyzed by FGL Laboratories, located in Santa Paula, California. The samples were analyzed for the naturally occurring radionuclides, Actinium-228, Bismuth-212, Bismuth-214, Lead-212, Potassium-41, and Gross Alpha and Beta radiation. The samples were also analyzed for Cesium-137, a man made isotope associated with nuclear research. The results of the analyses are summarized in Table One.

Five of the samples discussed above were submitted to Paragon Laboratories (Fort Collins, Colorado) and 10 of the samples to SC & A Laboratories (Montgomery, Alabama) for additional analysis for Strontium-90 and Plutonium-238, 239 and 240. The results of these analyses are summarized in Table Two. The results of the radiological investigation are discussed in more detail in the *Radiological Investigation Report* (Appendix A).

DTSC performed a review of the June 7, 2006 *Radiological Investigation Report*. Based on their evaluation of the data, DTSC recommended that additional radiological samples be collected and analyzed, from areas which exceed the upper bound 98$^{th}$ percentile of the data. The original sample locations exceeding the 98$^{th}$ percentile upper bound limit should be re-sampled and four additional step out samples collected and analyzed. A copy of DTSC comments to the Radiological Investigation Report and recommended additional sampling activities are provided in Appendix B.

## 3.0 PROPOSED SCOPE OF WORK

### 3.1 Radionuclides of Concern

The results of the analysis of the 41 samples for naturally occurring radionuclides did not indicate the presence of any elevated levels of these nuclides. Therefore, the Supplemental Radiological Investigation will not include any analyses for Actinium-228, Bismuth-212, Bismuth-214, Lead-212, Potassium-41, Gross Alpha, or Beta radiation. However, based on the concerns expressed by the community and the DTSC, the following radionuclides will be analyzed for by the laboratory:

- Cesium-137 (Cs-137)
- Strontium 90 (Sr-90)
- Plutonium-238/239 and 240 (Pu-238/239/240)

### 3.2 Proposed Sampling Locations

To determine the areas where additional "step out" sampling would be conducted, the laboratory data for Cs-137, Sr-90 and Pu-238/239 and 240 were

compared to their statistical distributions. By comparing the laboratory data to the upper bound 98th percentile for each radionuclide, areas exceeding the upper bound limit are identified. Table Three presents an evaluation of the laboratory data for Cs-137, Sr-90 and Pu-238/239 and 240. Data values for each nuclide which are greater than the upper bound 98th percentile are highlighted in red. Based on the data distribution shown in Table Three, 12 locations were selected for additional sampling, as shown in Figure 3.

As shown in Figure 3, for each area selected for additional sampling, one sample will be collected from the original sampling location. Up to four samples will be collected from the adjacent grids, approximately 80 to 100 feet from the original sampling location.

3.3 Sampling Procedures

The scope of work for this proposal includes the collection and analysis of soil samples for radiological analysis. The work will be performed by Allwest Remediation under DTSC oversight. The following procedures will be used to collect the supplemental radiological soil samples.

1) The prior radiological sampling points will be located using GPS coordinates.

2) The locations of the proposed samples will be identified and staked.

3) The grid areas adjacent to the prior sampling location will be monitored using a Tissue Dose Equivalent Radiological survey instrument. A minimum of 5 locations will be monitored within each grid area. The highest and lowest readings at each monitoring point will be recorded.

4) Vegetation and/or debris will be carefully removed to minimize soil disturbance around the proposed sampling location.

5) Soil samples will be collected using a trowel or hand auger. The samples will be collected from 0 to 1 foot below ground surface.

6) The soil sample will be divided into three portions, and then placed in clean jars.
   - One sample will be used for laboratory analysis
   - One sample will be provided to DTSC
   - One sample will be retained for possible future use
   - One sample will be collected for duplicate analysis for each 10 samples analyzed.

7) The sample jars will be labeled indicating the date, time, sampler, location and sample Identification number.

8) The samples will be labeled and shipped under chain of custody to the radiological Laboratory.

9) The samples will be analyzed as indicated in Table Four. Tables Four and Five also indicate the minimum quality assurance/quality control criteria for the samples.

10) On receipt of the radiological data, a brief report will be prepared comparing the results of the previous investigation and the supplemental radiological investigation.

The above sampling activities will be conducted using the procedures presented in the November 22, 2005 *Preliminary Endangerment Assessment Workplan*.

## 4.0 SCHEDULE

The sampling activities described above will be initiated at the conclusion of the DTSC's proposed 30 day public comment period.

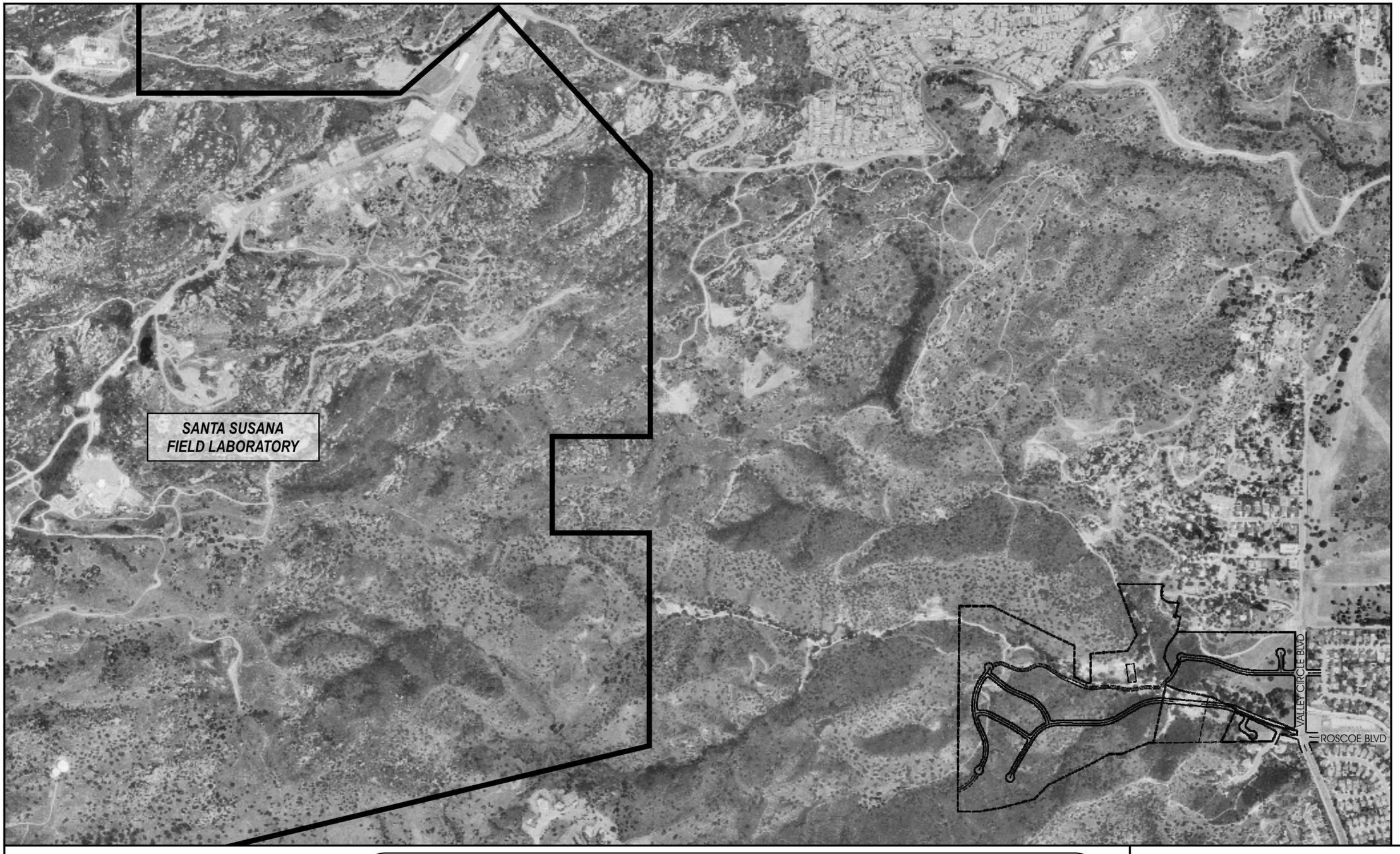
## 5.0 STATEMENT OF LIMITATIONS

Information provided in this report by Allwest Remediation, Inc., Project Number 05-8520 is intended exclusively for the use of Centex in the assessment of potential environmental liability for the subject property. The findings and conclusions discussed in this report are based on field and laboratory data collected during the course of this investigation and our current understanding and interpretation of environmental regulatory agency regulations, guidelines and policies. The professional services have been performed in accordance with practices generally accepted by other construction engineers, geologists, hydrogeologists, environmental engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. There is no guarantee that the work conducted will identify any and all sources or locations of contamination.

Respectfully submitted,

ALLWEST REMEDIATION, INC.

RICHARD SCOTT
Operations Manager




N

**LEGEND**

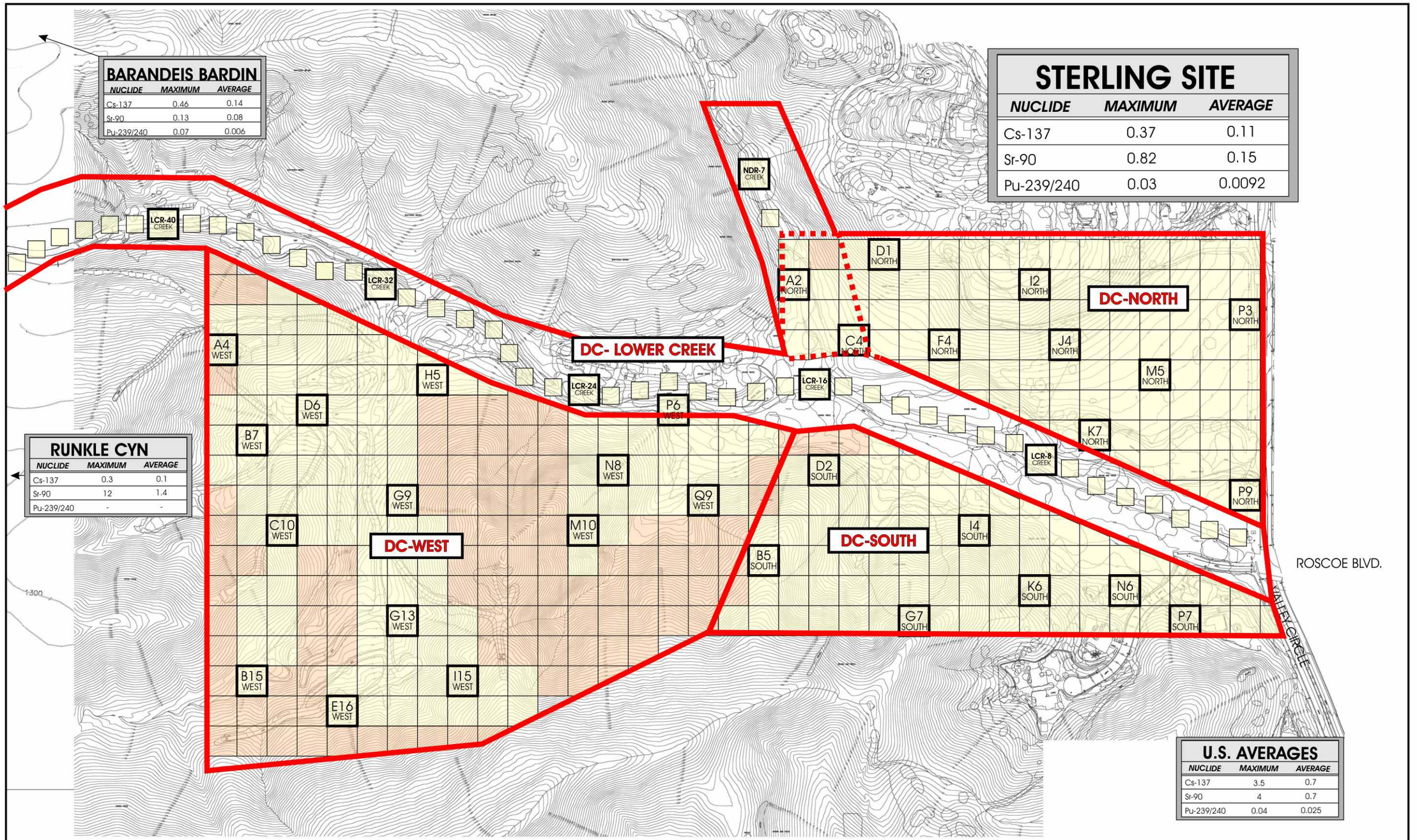
SANTA SUSANA FIELD LABORATORY

PROJECT LAYOUT

**SITE VICINITY MAP**
STERLING HOMES
WEST HILLS, CA

ALLWEST REMEDIATION

| JOB NO. 05 8520 | DATE: JUNE 2006 | FIGURE NO. 1 |
|---|---|---|

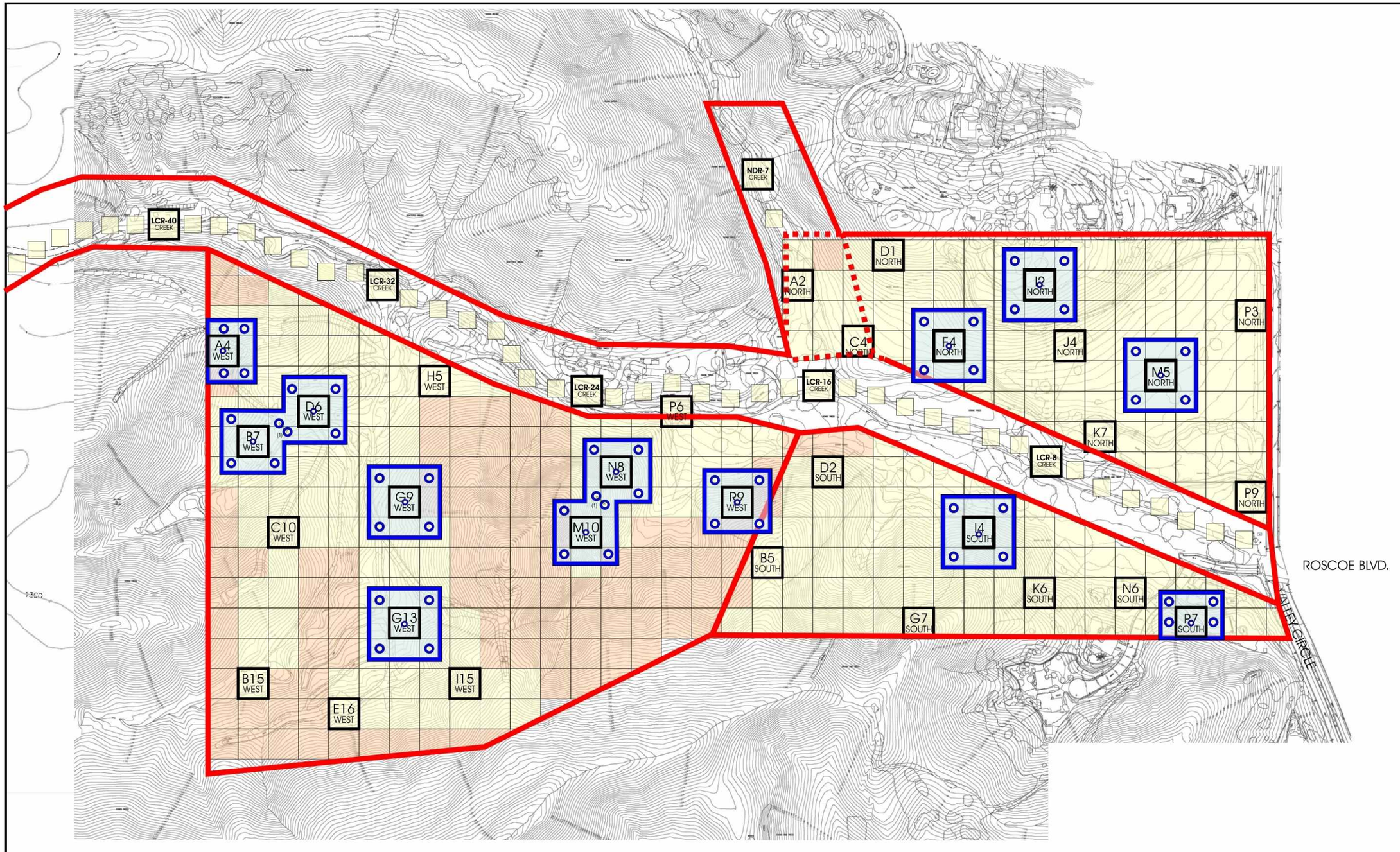



**RADIOLOGICAL SAMPLING SUMMARY RESULTS AND BACKGROUND COMPARISON**

STERLING HOMES
WEST HILLS, CA

ALLWEST REMEDIATION

| JOB NO. 05 8520 | DATE: JUNE 2006 | FIGURE NO. 2 |
|---|---|---|




**LEGEND**

- 100'x100' SAMPLE GRID AREA MONITORED
- B15 WEST — SAMPLE COLLECTED
- GRID NOT MONITORED AREA NOT ACCESSIBLE
- PROPOSED RADIOLOGICAL MONITORING AREA
- PROPOSED SAMPLING LOCATIONS
- PROPOSED COMBINED SAMPLING LOCATIONS
- SAMPLING AREAS

**PROPOSED RADIOLOGICAL SAMPLING**
STERLING HOMES
WEST HILLS, CA

ALLWEST REMEDIATION

| JOB NO. 05 8520 | DATE: SEPT 2006 | FIGURE NO. 3 |
|---|---|---|

TABLE ONE

# RADIOMETRIC RESULTS FOR SOIL SAMPLES

METHOD 901.1/9310 (Results in pCi/g)

| Sample I.D. | Sample Date | γ (Ac-228) | γ (Bi-212) | γ (Bi-214) | γ (Cs-137) | γ (Pb-212) | γ (Pb-214) | γ (K-40) | GROSS α | GROSS β |
|---|---|---|---|---|---|---|---|---|---|---|
| A2-N | 10/27/2005 | 0.561 | 0.327 | 0.627 | 0.00201 | 0.791 | 0.705 | 21.4 | 16.8 | 27.6 |
| C4-N | 10/27/2005 | 0.446 | 0.396 | 0.937 | 0.15 | 1 | 1.09 | 19.8 | 9.39 | 16.5 |
| D1-N | 10/27/2005 | 0.571 | 0.496 | 1.26 | 0.0424 | 0.669 | 1.28 | 12.6 | 3.82 | 2.11 |
| F4-N | 10/27/2005 | 1.3 | 0.504 | 0.905 | 0.134 | 1.24 | 0.929 | 16.8 | 32.1 | 43.2 |
| I2-N | 10/27/2005 | 0.887 | 0.494 | 0.712 | 0.26 | 0.918 | 0.903 | 16.2 | 38.1 | 29.1 |
| J4-N | 10/27/2005 | 1.15 | 0.722 | 1.14 | 0.093 | 1.22 | 1.21 | 20.6 | 21.9 | 19.9 |
| M5-N | 10/27/2005 | 0.833 | 0.983 | NA | 0.0434 | 1.28 | 1.17 | 26.5 | 12.8 | 17.8 |
| K7-N | 10/27/2005 | NA | NA | NA | 0.0408 | 1.21 | 1.04 | 22.8 | 7.83 | 19.6 |
| P3-N | 10/27/2005 | 0.53 | NA | 0.648 | 0.05 | 0.693 | 0.6 | 21.3 | 12.8 | 18.2 |
| P9-N | 10/27/2005 | 0.887 | 1.27 | 1.14 | 0.128 | 1.21 | 1.01 | 20.7 | 9.46 | 20.6 |
| B5-S | 10/27/2005 | 0.867 | 1.06 | 1.02 | 0.167 | 0.991 | NA | 13.6 | 16.8 | 16 |
| D2-S | 10/28/2005 | 0.442 | 0.498 | 0.709 | 0.031 | 0.667 | 0.771 | 17.4 | 7.63 | 16.5 |
| G7-S | 10/28/2005 | 1.31 | 1.11 | 1 | 0.133 | 1.4 | 1.17 | 23.2 | 17.2 | 21.6 |
| I4-S | 10/27/2005 | 0.813 | 0.924 | 0.961 | 0.0316 | 0.857 | 1.09 | 17 | 41.3 | 49.1 |
| N6-S | 10/28/2005 | 0.939 | 0.747 | 1.16 | 0.055 | 1.77 | 1.59 | 28.1 | 13.2 | 26.3 |
| K6-S | 10/28/2005 | 1.16 | 1.3 | 0.661 | 0.0965 | 1.13 | 0.625 | 19.5 | 16.2 | 17.5 |
| P7-S | 10/28/2005 | NA | 0.559 | 1.66 | 0.0356 | 1.03 | 1.68 | 15 | 21.9 | 20.3 |
| A4-W | 10/31/2005 | 1.07 | 0.46 | 0.967 | 0.0552 | 1.2 | 0.705 | 18.5 | 22.6 | 28.9 |
| B7-W | 10/31/2005 | 0.859 | 0.208 | 0.902 | 0.215 | 1.12 | 0.868 | 18.3 | 36.1 | 38.2 |
| E16-W | 10/31/2005 | 0.862 | 0.348 | 0.666 | 0.0127 | 0.974 | 0.816 | 16.8 | 12 | 15.6 |
| B15-W | 10/31/2005 | 1.2 | NA | 1.1 | 0.0769 | 1.08 | 1.2 | 15.4 | 13 | 10.4 |
| C10-W | 10/31/2005 | 0.79 | 0.941 | 0.828 | 0.0578 | 0.888 | 1.03 | 15.5 | 38.4 | 42.1 |
| D6-W | 10/31/2005 | 1.2 | NA | 1.76 | 0.217 | 1.2 | 1.88 | 19.5 | 7.3 | 14.3 |
| G9-W | 10/31/2005 | 0.921 | 1.28 | 1 | 0.31 | 1.3 | 1.27 | 19.6 | 11.8 | 15 |
| G13-W | 10/31/2005 | 1.24 | 0.899 | 0.976 | 0.262 | 1.18 | 1.08 | 20.8 | 11.5 | 8.38 |
| H5-W | 10/31/2005 | NA | 0.457 | 0.756 | 0.0889 | 1.22 | 1.01 | 18.8 | 16.6 | 16.3 |
| I15-W | 10/31/2005 | 1.39 | 0.569 | 1.1 | 0.187 | 1.39 | 1.12 | 21.1 | 6.95 | 9.56 |
| M10-W | 10/31/2005 | 0.775 | 0.771 | NA | 0.377 | 1.73 | 1.56 | 24 | 15.9 | 15 |
| N8-W | 10/28/2005 | 1.48 | 1.07 | 1.36 | 0.378 | 2.76 | 1.63 | 33.7 | 17.8 | 17.5 |
| P6-W | 10/28/2005 | 1.22 | 0.929 | 1.15 | 0.0989 | 1.3 | 1.26 | 21.2 | 15.6 | 17 |
| R9-W | 10/28/2005 | 0.482 | 0.346 | 0.764 | 0.036 | 0.924 | 0.771 | 14.2 | 14.2 | 14.7 |
| Debris P6 | 10/28/2005 | 0.714 | NA | 1.82 | 0.035 | 0.803 | 1.8 | 13.6 | 28.4 | 17.4 |

NOTE: alpha-numeric string denotes sample location, subsequent letter denotes sampling area

TABLE TWO

## SUMMARY OF LABORATORY ANALYSIS FOR
## SR-90, PU-238, PU-239, PU-240

| SAMPLE ID | STRONTIUM-90 | | PLUTONIUM | | | | LABORATORY |
|---|---|---|---|---|---|---|---|
| | | | PU-238 | | PU-233/240 | | |
| | ACTIVITY p Ci/g | DETECTION LIMIT p Ci/g | ACTIVITY p Ci/g | DETECTION LIMIT p Ci/g | ACTIVITY p Ci/g | DETECTION LIMIT p Ci/g | |
| F-4-N | 0.30 | 0.21 | 0.005 | 0.016 | 0.006 | 0.008 | P |
| B-5-S | 0.038 | 0.217 | 0.002 | 0.016 | 0.019 | 0.009 | P |
| C-10-W | 0.043 | 0.202 | 0.003 | 0.009 | -0.001 | 0.017 | P |
| N-8-W | 0.35 | 0.21 | 0.003 | 0.019 | 0.019 | 0.023 | P |
| M-10-W | 0.12 | 0.21 | -0.002 | 0.020 | 0.016 | 0.023 | P |
| A-4-W | 0.586 | 0.778 | 0.004 | 0.012 | 0.006 | 0.023 | SCA |
| D-6-W | 0.192 | 0.715 | 0.000 | 0.012 | 0.005 | 0.012 | SCA |
| G-9-W | 0.824 | 0.703 | 0.000 | 0.011 | 0.008 | 0.011 | SCA |
| P-6-W | -0.586 | 0.904 | 0.000 | 0.010 | 0.012 | 0.010 | SCA |
| G-13-W | 0.087 | 0.872 | -0.003 | 0.023 | 0.026 | 0.012 | SCA |
| R-9-W | -0.183 | 0.843 | 0.000 | 0.010 | 0.004 | 0.010 | SCA |
| I-4-S | 0.470 | 0.782 | -0.002 | 0.020 | -0.002 | 0.020 | SCA |
| N-6-S | -0.256 | 0.761 | 0.002 | 0.021 | 0.016 | 0.011 | SCA |
| A-2-N | 0.155 | 0.740 | -0.003 | 0.025 | 0.002 | 0.025 | SCA |
| M-5-N | 0.064 | 0.665 | 0.002 | 0.019 | 0.002 | 0.019 | SCA |
| LCR-40 | 0.060 | 0.740 | 0.002 | 0.020 | 0.002 | 0.010 | SCA |
| LCR-24 | 0.087 | 0.650 | 0.000 | 0.021 | 0.002 | 0.011 | SCA |
| LCR-8 | 0.150 | 0.842 | 0.002 | 0.023 | 0.002 | 0.011 | SCA |

P=PARAGON LAROATORIES
SCA = S. COHEN AND ASSOCIATES LABORATORY
p Ci/g = PICO CURIES PRE GRAM

TABLE THREEE

# Statistical Evaluation of Radiological Data

METHOD 901.1/9310 (Results in pCi/g)

| Sample I.D. | Sample Date | (Cs-137) | (Sr-90) | (Pu-238) | (Pu-239/240) | LOCATION SELECTED FOR SUPPLEMENTAL RADIOLOGICAL INVESTIGATION |
|---|---|---|---|---|---|---|
| UPPER BOUND 98TH PERCENTILE pCi/g | | 0.21 | 0.34 | 0.005 | 0.025 | - |
| A2-N | 10/27/2005 | 0.00201 | 0.155 | -0.003 | 0.002 | |
| C4-N | 10/27/2005 | 0.15 | | | | |
| D1-N | 10/27/2005 | 0.0424 | | | | |
| F4-N | 10/27/2005 | 0.134 | 0.3 | 0.005 | 0.006 | √ |
| I2-N | 10/27/2005 | 0.26 | | | | √ |
| J4-N | 10/27/2005 | 0.093 | | | | |
| M5-N | 10/27/2005 | 0.0434 | 0.064 | 0.002 | 0.002 | √ |
| K7-N | 10/27/2005 | 0.0408 | | | | |
| P3-N | 10/27/2005 | 0.05 | | | | |
| P9-N | 10/27/2005 | 0.128 | | | | |
| B5-S | 10/27/2005 | 0.167 | 0.038 | 0.002 | 0.019 | |
| D2-S | 10/28/2005 | 0.031 | | | | |
| G7-S | 10/28/2005 | 0.133 | | | | |
| I4-S | 10/27/2005 | 0.0316 | 0.47 | -0.002 | -0.002 | √ |
| N6-S | 10/28/2005 | 0.055 | -0.256 | 0.002 | 0.016 | |
| K6-S | 10/28/2005 | 0.0965 | | | | |
| P7-S | 10/28/2005 | 0.0356 | | | | |
| A4-W | 10/31/2005 | 0.0552 | 0.586 | 0.004 | 0.006 | √ |
| B7-W | 10/31/2005 | 0.215 | | | | √ |
| E16-W | 10/31/2005 | 0.0127 | | | | |
| B15-W | 10/31/2005 | 0.0769 | | | | |
| C10-W | 10/31/2005 | 0.0578 | 0.043 | 0.003 | -0.001 | |
| D6-W | 10/31/2005 | 0.217 | 0.192 | 0 | 0.005 | √ |
| G9-W | 10/31/2005 | 0.31 | 0.824 | 0 | 0.008 | √ |
| G13-W | 10/31/2005 | 0.262 | 0.087 | -0.003 | 0.026 | √ |
| H5-W | 10/31/2005 | 0.0889 | | | | |
| I15-W | 10/31/2005 | 0.187 | | | | |
| M10-W | 10/31/2005 | 0.377 | 0.12 | -0.002 | 0.016 | √ |
| N8-W | 10/28/2005 | 0.378 | 0.35 | 0.003 | 0.019 | √ |
| P6-W | 10/28/2005 | 0.0989 | -0.586 | 0 | 0.012 | |
| R9-W | 10/28/2005 | 0.036 | -0.183 | 0 | 0.004 | √ |
| LCR-40 | | | 0.06 | 0.002 | 0.002 | |
| LCR-24 | | | 0.087 | 0 | 0.002 | |
| LCR-8 | | | 0.15 | 0.002 | 0.002 | |

Samples highlighted in red exceed the upperbound 98th Percentile

# TABLE FOUR
## LABORATORY-SPECIFIC ANALYTICAL DATA QUALITY OBJECTIVES

| ANALYTE (S) | ANALYTICAL METHOD | DETECTION LIMIT (1) | ACCURACY (%) (2) | PRECISION (%) | COMPLETENESS (%) | CONTAINER | PRESERVATIVE | HOLDING TIME |
|---|---|---|---|---|---|---|---|---|
| Cesium 137 | 901.1 | 0.01 pCig | 75-125 | ± 25 | 90 | Tube or jar Teflon sealed | None < 4° C | 6 months |
| Strontium 90 | SRW=01 | 0.250 pCig | 75-125 | ± 25 | 90 | Tube or jar Teflon sealed | None < 4° C | 6 months |
| Plutonium 238 | ACW-03 | 0.02 pCig | 75-125 | ± 30 | 90 | Tube or jar Teflon sealed | None < 4° C | 6 months |
| Plutonium 239/240 | ACW-03 | 0.01 pCig | 75-125 | ± 25 | 90 | Tube or jar Teflon sealed | None < 4° C | 6 months |

(1) Detection limits and data management considerations per SW-846 and EPA procedure

(2) Acurracy and precision are matrix- and analyte-specific

(3) Detection limits are provided in Table 9.1 in the QAPP Appendix B.

(4) Detection limits are provided in Table 9.2 in the QAPP Appendix B

(5) DTSC Advisory - Active Soil Gas Investigation, US EPA Method 8260b - soil gas.

## TABLE FIVE

### DETAILED QA/QC REPORTING REQUIREMENTS

| METHODS OF ANALYSIS | | REQUIRED QA/QC REPORTS | | | | |
|---|---|---|---|---|---|---|
| METHOD | EPA TEST METHOD | DUPLICATE | REAGENT OR LABORATORY BLANK | MATRIX SPIKE | MATRIX SPIKE DUPLICATE | SURROGATE RECOVERY |
| Cesium 137 | 901.1 | √ | √ | | | √ |
| Strontium 90 | SRW=01 | √ | √ | | | √ |
| Plutonium 238 | ACW-03 | √ | √ | | | √ |
| Plutonium 239/240 | ACW-03 | √ | √ | | | √ |

Laborartory QAPP is provided in Appendix B