
FINAL
SUBAREA 7 ROUND 2 ADDENDUM
TO THE FINAL FSP FOR SOIL SAMPLING
SANTA SUSANA FIELD LABORATORY SITE
AREA IV RADIOLOGICAL STUDY

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SUBJECT: Subarea 7 Round 2 Addendum to the Final Field Sampling Plan for Soil Sampling

CONTRACT NO: EP-S7-05-05
TASK ORDER NO: 0038

INTRODUCTION

HydroGeoLogic, Inc. (HGL) has been tasked by the U.S. Environmental Protection Agency (USEPA) to conduct a radiological characterization study of Area IV and the Northern Buffer Zone (NBZ) at the Santa Susana Field Laboratory (SSFL) site in Ventura County, California. This work is being executed under USEPA Region 7 Architect and Engineering Services Contract EP-S7-05-05, Task Order 0038, Amendment 3. The technical lead on the project is USEPA Region 9.

This document supports the field implementation of the overall soil sampling program and is an addendum to the Final Field Sampling Plan (FSP) for Soil Sampling (HGL, 2012a). A description of the overall project goals, data quality objectives, sampling strategy, laboratory analytical suites, sample depth interval selection, data quality control, and data evaluation are described in the FSP.

PURPOSE

This addendum documents the rationale used to determine the location and depth of soil samples to be collected during round 2 soil sampling within Subarea 7. Sample locations are summarized in Table 1 (Attachment 1) and illustrated on the figures provided in Attachment 2. This addendum also documents the laboratory analyses that will be performed for each soil sample.

Specific sample locations presented herein were discussed during a technical review meeting held on April 18, 2012, with members of USEPA’s SSFL Technical Stakeholder group consisting of representatives of U.S. Department of Energy (DOE), the State of California Department of Toxic Substances Control (DTSC), The Boeing Company, USEPA, and the community members. Recommendations and action items identified at the technical review meeting, including those on the topic of Likely Decontamination and Decommissioning Zones (LD&DZ) and Likely Chemical Remediation Zones (LCRZ) have been incorporated into this FSP Addendum. USEPA understands that most, if not all, surface soil and infrastructure (building structures, concrete slabs, above-ground pipelines and underground pipelines etc.) may be excavated and removed from areas identified as LD&DZ and LCRZs. Therefore, USEPA placed a reduced number of surface and subsurface samples around the perimeter of these zones to better define the potential extent of contamination. In accordance with the USEPA’s role under the Administrative Order on Consent (AOC) for Remedial Action (DTSC, 2010) agreement between DTSC and DOE for the SSFL site, USEPA will conduct confirmation soil sampling to verify that site remediation goals have been achieved at all such remediation zones. These follow-on efforts are not included in the current scope of work and will be accomplished using additional external funding.

ROUND 1 ANALYTICAL SUMMARY

A total of 257 soil samples (115 surface, 133 subsurface, and 9 drainage) were collected during round 1 sampling in Subarea 7. Analysis of the 257 round 1 soil samples identified 115 samples with radionuclide activities exceeding radiological trigger levels (RTL) developed for the Area IV Santa Susana Field Laboratory Radiological Study. The process used to derive the RTLs is presented in the Technical Memorandum, Radiological Trigger Levels (HGL, 2011a). A total of 137 concentrations exceeding the RTLs were identified in 115 round 1 soil samples collected from the following areas within Subarea 7.

- Panhandle Area,
- Building 4133 and Interim Storage Facility,
- RMHF,
- Outfall 3 Drainage,
- RMHF Holding Pond, and
- Southern Portion.

Table 2 summarizes the RTL exceedances identified during round 1 sampling by number of locations, samples, and radionuclides exceeding the RTLs.

Table 2
Round 1 Locations, Samples and Radionuclides with Exceedances

Area of RTL Exceedance	Locations	Samples	Radionuclides Exceeding RTLs
Panhandle Area	5	6	11
Building 4133 and Interim Storage Facility	19	21	24
RMHF	28	39	44
Outfall 3 Drainage	21	24	32
RMHF Holding Pond	20	24	25
Southern Portion	1	1	1
Totals	94	115	137

Notes:

Reporting units in picocuries per gram.

Table 3 summarizes the radionuclides and the range of activity detected at each of these areas. Figure 1 provides an overview map showing the location of each round 1 sample with radionuclide activities exceeding RTLs (Attachment 2). Round 1 soil sample results will be presented in the Technical Memorandum Subarea 7 Round 1 Soil Sample Results (HGL, 2012b).

Table 3
Round 1 Radiological Trigger Level Exceedances

Area of RTL Exceedance	Analyte	Number of Exceedances	Range of Concentration	RTL
Panhandle Area	Cs-137	5	0.214 - 20.2	0.207
	Sr-90	6	0.647 - 4.20	0.485
Building 4133 and Interim Storage Facility	Cs-137	20	0.211 - 2.53	0.207
	Sr-90	4	0.696 - 1.36	0.485
RMHF	Cs-137	38	0.207 - 19.8	0.207
	Sr-90	5	0.491 - 1.19	0.485
	Pu-239/240	1	0.0475	0.0404
Outfall 3 Drainage	Cs-137	19	0.210 - 4.70	0.207
	Sr-90	13	0.489 - 14.3	0.485
RMHF Holding Pond	Cs-137	16	0.213 - 2.68	0.207
	Sr-90	8	0.517 - 3.57	0.485
	Pu-239/240	1	0.0702	0.0404
Southern Portion	Sr-90	1	0.517	0.207

Notes:

Reporting units in picocuries per gram.

Cs - cesium

Pu - plutonium

Sr - strontium

ROUND 2 PROPOSED SAMPLING LOCATIONS

Lines of evidence presented in the Subarea 7 FSP Addendum (HGL, 2011b) for round 1 such as gamma scanning and geophysical survey results, aerial photographic interpretation, and historical process knowledge were evaluated to assist with the placement of round 2 sampling locations. In addition to these lines of evidence, results from the round 1 soil sampling event were also evaluated. A total of 170 soil samples (109 step-out locations) are proposed for round 2 soil sampling. Exceedances within the LCRZs do not require step-out locations, as the soil within the LCRZs are scheduled to be remediated or removed. Therefore, proposed step-out samples were placed around the zone's perimeter to better define the potential extent of contamination associated with such zones but did not place step-out locations around exceedances detected within the LCRZs. Table 1 (Attachment 1) details the location and the technical justification for each of these soil samples. Table 4 summarizes the number of samples proposed to be collected within each area where radionuclide activity was detected above the RTLs in round 1 soil samples.

Table 4
Round 2 Samples by Area

Area of Round 1 RTL Exceedances	Drainage	Surface	Subsurface	Total
Panhandle	0	7	7	14
Former Building 4133 and Former Building 4654	2	29	19	50
RMHF	0	6	4	10
Outfall 3 Drainage	1	27	21	49
RMHF Holding Pond	1	16	27	44
Southern Portion	0	0	3	3
Total	4	85	81	170

SCHEDULE

Round 2 soil sampling within Subarea 7 will commence in May and be completed in June 2012. USEPA will provide periodic updates to SSFL Stakeholders regarding the status of the soil sampling program as well as the laboratory analysis and data interpretation.

REFERENCES

HydroGeoLogic, Inc., 2011a. Technical Memorandum, Radiological Trigger Levels, Santa Susana Field Laboratory, Area IV Radiological Study. December.

HydroGeoLogic, Inc., 2011b. Subarea 7 FSP Addendum, Area IV Radiological Study, Santa Susana Field Laboratory Ventura County, California. September.

HydroGeoLogic, Inc., 2012a. Final Field Sampling Plan for Soil Sampling, Area IV Radiological Study, Santa Susana Field Laboratory Ventura County, California. January.

HydroGeoLogic, Inc., 2012b. Draft Technical Memorandum, Subarea 7 Round 1 Soil Sample Results, Santa Susana Field Laboratory Area IV Radiological Study. May.

State of California, Environmental Protection Agency, Department of Toxic Substances Control, 2010. Administrative Order On Consent For Remedial Action, Santa Susana Field Laboratory, Simi Hills, Ventura County, California. December.

LIST OF ATTACHMENTS

Attachment 1	Table
Attachment 2	Figures
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ATTACHMENT 1

Table 1 Summary of Soil Sample Locations

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Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00189	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 20 feet northwest of Location 70.	Cs-137 and Sr-90 were detected at concentrations of 6.17 pCi/g and 0.647 pCi/g (respectively) in surface soils and Sr-90 was detected at a concentration of 0.782 pCi/g in subsurface soils at sample Location 70, and near GRAY 37C and 41C.	Sr-90, Gamma Spec
7-00189	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 20 feet northwest of Location 70.	Cs-137 and Sr-90 were detected at concentrations of 6.17 pCi/g and 0.647 pCi/g (respectively) in surface soils and Sr-90 was detected at a concentration of 0.782 pCi/g in subsurface soils at sample Location 70, and near GRAY 37C and 41C.	Sr-90, Gamma Spec
7-00190	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 15 feet north of Location 37.	Cs-137 and Sr-90 were detected at concentrations of 20.2 pCi/g and 4.2 pCi/g (respectively) in surface soils at sample Location 37, and near GRAY 37C and GRAY 41C.	Sr-90, Gamma Spec
7-00190	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 15 feet north of Location 37.	Cs-137 and Sr-90 were detected at concentrations of 20.2 pCi/g and 4.2 pCi/g (respectively) in surface soils at sample Location 37, and near GRAY 37C and GRAY 41C.	Sr-90, Gamma Spec
7-00191	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 15 feet north of Location 71 and Location 178.	Cs-137 and Sr-90 were detected at concentrations of 0.43 pCi/g and 0.742 pCi/g (respectively) in surface soils at sample Location 71, Cs-137 and Sr-90 were detected at concentrations of 8.86 pCi/g and 2.31 pCi/g (respectively) in surface soils at sample Location 178, and near GRAY 37C and GRAY 41C.	Sr-90, Gamma Spec
7-00191	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 10 feet north of Location 71 and Location 178.	Cs-137 and Sr-90 were detected at concentrations of 0.43 pCi/g and 0.742 pCi/g (respectively) in surface soils at sample Location 71, Cs-137 and Sr-90 were detected at concentrations of 8.86 pCi/g and 2.31 pCi/g (respectively) in surface soils at sample Location 178, and near GRAY 37C and GRAY 41C.	Sr-90, Gamma Spec
7-00192	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 10 feet northeast of Location 41.	Cs-137 and Sr-90 were detected at concentrations of 0.214 pCi/g and 2.12 pCi/g (respectively) in surface soils at sample Location 41, and near GRAY 41C.	Sr-90, Gamma Spec
7-00192	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 10 feet northeast of Location 41.	Cs-137 and Sr-90 were detected at concentrations of 0.214 pCi/g and 2.12 pCi/g (respectively) in surface soils at sample Location 41, and near GRAY 41C.	Sr-90, Gamma Spec
7-00193	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 15 feet south of Location 41.	Cs-137 and Sr-90 were detected at concentrations of 0.214 pCi/g and 2.12 pCi/g (respectively) in surface soils at sample Location 41, and near GRAY 41C.	Sr-90, Gamma Spec
7-00193	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 15 feet south of Location 41.	Cs-137 and Sr-90 were detected at concentrations of 0.214 pCi/g and 2.12 pCi/g (respectively) in surface soils at sample Location 41, and near GRAY 41C.	Sr-90, Gamma Spec
7-00194	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 20 feet south of Location 178.	Cs-137 and Sr-90 were detected at concentrations of 0.43 pCi/g and 0.742 pCi/g (respectively) in surface soils at sample Location 71, Cs-137 and Sr-90 were also detected at concentrations of 8.86 pCi/g and 2.31 pCi/g (respectively) in surface soils at sample Location 178, and near GRAY 37C and GRAY 41C.	Sr-90, Gamma Spec
7-00194	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 20 feet south of Location 178.	Cs-137 and Sr-90 were detected at concentrations of 0.43 pCi/g and 0.742 pCi/g (respectively) in surface soils at sample Location 71, Cs-137 and Sr-90 were also detected at concentrations of 8.86 pCi/g and 2.31 pCi/g (respectively) in surface soils at sample Location 178, and near GRAY 37C and GRAY 41C.	Sr-90, Gamma Spec
7-00195	Surface	Located in the northern Panhandle Area of Subarea 7, approximately 20 feet southeast of Location 70.	Cs-137 and Sr-90 were detected at concentrations of 6.17 pCi/g and 0.647 pCi/g (respectively) in surface soils and Sr-90 was detected at a concentration of 0.782 pCi/g in subsurface soils at sample Location 70, and near GRAY 37C and 41C.	Sr-90, Gamma Spec
7-00195	Subsurface	Located in the northern Panhandle Area of Subarea 7, approximately 20 feet southeast of Location 70.	Cs-137 and Sr-90 were detected at concentrations of 6.17 pCi/g and 0.647 pCi/g (respectively) in surface soils and Sr-90 was detected at a concentration of 0.782 pCi/g in subsurface soils at sample Location 70, and near GRAY 37C and 41C.	Sr-90, Gamma Spec
7-00196	Surface	Located in the HWMF area, north of Building 4133, approximately 15 feet north of Location 33.	Cs-137 was detected at a concentration of 0.778 pCi/g in surface soils at sample Location 33, and near GRAY 33C.	Gamma Spec
7-00196	Subsurface	Located in the HWMF area, north of Building 4133, approximately 15 feet north of Location 33.	Cs-137 was detected at a concentration of 0.778 pCi/g in surface soils at sample Location 33, and near GRAY 33C.	Gamma Spec
7-00197	Surface	Located in the HWMF area, north of Building 4133, approximately 15 feet southwest of Location 33.	Cs-137 was detected at a concentration of 0.778 pCi/g in surface soils at sample Location 33, and near GRAY 33C.	Gamma Spec
7-00197	Subsurface	Located in the HWMF area, north of Building 4133, approximately 15 feet southwest of Location 33.	Cs-137 was detected at a concentration of 0.778 pCi/g in surface soils at sample Location 33, and near GRAY 33C.	Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00198	Surface	Located in the HWMF area, north of Building 4133, approximately 10 feet southwest of Location 38 and approximately 25 feet southeast of Location 33.	Cs-137 was detected at concentrations of 0.704 pCi/g and 0.778 pCi/g in surface soils at sample Locations 38 and 33, near GRAY 38C.	Gamma Spec
7-00198	Subsurface	Located in the HWMF area, north of Building 4133, approximately 10 feet southwest of Location 38 and approximately 25 feet southeast of Location 33.	Cs-137 was detected at concentrations of 0.704 pCi/g and 0.778 pCi/g in surface soils at sample Locations 38 and 33, near GRAY 38C.	Gamma Spec
7-00199	Surface	Located in the HWMF area, north of Building 4133, approximately 15 feet east of Location 38.	Cs-137 was detected at a concentration of 0.704 pCi/g in surface soils at sample Location 38, near GRAY 38C.	Gamma Spec
7-00199	Subsurface	Located in the HWMF area, north of Building 4133, approximately 15 feet east of Location 38.	Cs-137 was detected at a concentration of 0.704 pCi/g in surface soils at sample Location 38, near GRAY 38C.	Gamma Spec
7-00200	Surface	Located in the HWMF area, north of Building 4133, approximately 10 feet southeast of Location 183.	Cs-137 was detected at a concentration of 0.396 pCi/g in surface soils at sample Location 183, near GRAY 38C, and geophysical survey anomaly "magnetometer".	Gamma Spec
7-00200	Subsurface	Located in the HWMF area, north of Building 4133, approximately 10 feet southeast of Location 183.	Cs-137 was detected at a concentration of 0.396 pCi/g in surface soils at sample Location 183, near GRAY 38C and geophysical survey anomaly "magnetometer".	Gamma Spec
7-00201	Surface	Located in the HWMF area, north of Building 4133, approximately 10 feet southeast of Location 183.	Cs-137 was detected at a concentration of 0.396 pCi/g in surface soils at sample Location 183, near GRAY 38C, and geophysical survey anomaly "magnetometer".	Gamma Spec
7-00201	Subsurface	Located in the HWMF area, north of Building 4133, approximately 10 feet southeast of Location 183.	Cs-137 was detected at a concentration of 0.396 pCi/g in surface soils at sample Location 183, near GRAY 38C, and geophysical survey anomaly "magnetometer".	Gamma Spec
7-00202	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet west of Location 27.	Cs-137 was detected at a concentration of 2.53 pCi/g in surface soils at sample Location 27, near GRAY 27C.	Gamma Spec
7-00203	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet north of Location 27.	Cs-137 was detected at a concentration of 2.53 pCi/g in surface soils at sample Location 27, near GRAY 27C.	Gamma Spec
7-00204	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet east of Location 31 and northeast of Location 144.	Cs-137 was detected at concentrations of 0.684 pCi/g and 0.253 pCi/g in surface soils at sample Locations 31 and 144, near GRAY 31C.	Gamma Spec
7-00205	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet south of Location 144.	Cs-137 was detected at a concentration of 0.253 pCi/g in surface soils at sample Location 144, near GRAY 31C.	Gamma Spec
7-00206	Drainage	Located in the HWMF area, approximately 15 feet west of Location 144 at toe of slope, approximately 15 feet south of Location 27.	Cs-137 was detected at concentrations of 0.253 pCi/g and 2.53 pCi/g in surface soils at sample Locations 144 and 27, near GRAY 31C.	Gamma Spec
7-00206	Subsurface	Located in the HWMF area, approximately 15 feet west of Location 144 at toe of slope, approximately 15 feet south of Location 27.	Cs-137 was detected at concentrations of 0.253 pCi/g and 2.53 pCi/g in surface soils at sample Locations 144 and 27, near GRAY 31C.	Gamma Spec
7-00207	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet north of Location 34.	Cs-137 was detected at a concentration of 1.17 pCi/g in surface soils at sample Location 34, near GRAY 34C.	Gamma Spec
7-00208	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet east of Location 34.	Cs-137 was detected at a concentration of 1.17 pCi/g in surface soils at sample Location 34, near GRAY 34C.	Gamma Spec
7-00209	Surface	Located in the HWMF area, west of Building 4133, approximately 30 feet southwest of Location 146.	Cs-137 was detected at a concentration of 1.12 pCi/g in surface soils at sample Location 146, near GRAY 34C and GRAY 32C, and to horizontally delineate a Likely Chemical Remediation Zone	Gamma Spec
7-00210	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet southwest of Location 32.	Cs-137 was detected at a concentration of 1.74 pCi/g in surface soils at sample Location 32, near GRAY 32C.	Gamma Spec
7-00211	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet northwest of Location 32.	Cs-137 was detected at a concentration of 1.74 pCi/g in surface soils at sample Location 32, near GRAY 32C.	Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00212	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet northeast of Location 25.	Cs-137 was detected at concentrations of 0.374 pCi/g in surface soils at sample Location 25, near GRAY 25C.	Gamma Spec
7-00213	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet northwest of Location 25.	Cs-137 was detected at concentrations of 0.374 pCi/g in surface soils at sample Location 25, near GRAY 25C.	Gamma Spec
7-00214	Surface	Located in the HWMF area, west of Building 4133, approximately 15 feet southwest of Location 25.	Cs-137 was detected at concentrations of 0.374 pCi/g in surface soils at sample Location 25, near GRAY 25C.	Gamma Spec
7-00215	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet east of Location 78.	Cs-137 was detected at a concentration of 0.266 pCi/g in subsurface soils at sample Location 78, near an aerial photo feature "Open Storage" and historical documents show past contamination in this area.	Gamma Spec
7-00215	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet east of Location 78.	Cs-137 was detected at a concentration of 0.266 pCi/g in subsurface soils at sample Location 78, near an aerial photo feature "Open Storage" and historical documents show past contamination in this area.	Gamma Spec
7-00216	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet northeast of Location 39.	Sr-90 was detected at a concentration of 1.36 pCi/g in subsurface soils at sample Location 39, and near GRAY 39C.	Sr-90, Gamma Spec
7-00216	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet northeast of Location 39.	Sr-90 was detected at a concentration of 1.36 pCi/g in subsurface soils at sample Location 39, and near GRAY 39C.	Sr-90, Gamma Spec
7-00217	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet northwest of Location 39.	Sr-90 was detected at a concentration of 1.36 pCi/g in subsurface soils at sample Location 39, and near GRAY 39C.	Sr-90, Gamma Spec
7-00217	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet northwest of Location 39.	Sr-90 was detected at a concentration of 1.36 pCi/g in subsurface soils at sample Location 39, and near GRAY 39C.	Sr-90, Gamma Spec
7-00218	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 25 feet northeast of Location 36.	Cs-137 was detected at a concentration of 0.833 pCi/g in surface soils at sample Location 36, near GRAY 36C.	Gamma Spec
7-00218	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 25 feet northeast of Location 36.	Cs-137 was detected at a concentration of 0.833 pCi/g in surface soils at sample Location 36, near GRAY 36C.	Gamma Spec
7-00219	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet northeast of Location 73 and Location 30.	Cs-137 was detected at concentrations of 1.45 pCi/g and 0.974 pCi/g in surface soils at sample Locations 30 and 73, Sr-90 was also detected at a concentration of 0.696 pCi/g in surface soils at sample Location 30, Cs-137 was detected at a concentration of 0.211 pCi/g in subsurface soils at sample Location 30, and near GRAY 30C.	Sr-90, Gamma Spec
7-00219	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet northeast of Location 73 and Location 30.	Cs-137 was detected at concentrations of 1.45 pCi/g and 0.974 pCi/g in surface soils at sample Locations 30 and 73, Sr-90 was also detected at a concentration of 0.696 pCi/g in surface soils at sample Location 30, Cs-137 was detected at a concentration of 0.211 pCi/g in subsurface soils at sample Location 30, and near GRAY 30C.	Sr-90, Gamma Spec
7-00220	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet east of Location 29.	Cs-137 and Sr-90 were detected at concentrations of 1.81 pCi/g and 0.93 pCi/g (respectively) in surface soils at sample Location 29, near GRAY 29C.	Sr-90, Gamma Spec
7-00220	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet east of Location 29.	Cs-137 and Sr-90 were detected at concentrations of 1.81 pCi/g and 0.93 pCi/g (respectively) in surface soils at sample Location 29, near GRAY 29C.	Sr-90, Gamma Spec
7-00221	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet southeast of Location 28 across roadway.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00221	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet southeast of Location 28 across roadway.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00222	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet northeast of Location 28 in roadway.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00222	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet northeast of Location 28 in roadway.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00223	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet north of Location 28.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00223	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet north of Location 28.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00224	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet west of Location 28.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00224	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 15 feet west of Location 28.	Cs-137 was detected at a concentration of 1.29 pCi/g in surface soils at sample Location 28, near PGRAY 28C.	Gamma Spec
7-00225	Drainage	Located in the HWMF area, near the Interim Storage Facility, approximately 45 feet west of Location 28 and northwest of Location 26.	Cs-137 was detected at concentrations of 1.29 pCi/g and 0.647 pCi/g in surface soils at sample Locations 28 and 26, Cs-137 and Sr-90 were also detected at concentrations of 0.227 pCi/g and 0.712 pCi/g (respectively) in subsurface soils at sample Location 26, near PGRAY 28C.	Sr-90, Gamma Spec
7-00225	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 45 feet west of Location 28 and northwest of Location 26.	Cs-137 was detected at concentrations of 1.29 pCi/g and 0.647 pCi/g in surface soils at sample Locations 28 and 26, Cs-137 and Sr-90 were also detected at concentrations of 0.227 pCi/g and 0.712 pCi/g (respectively) in subsurface soils at sample Location 26, near PGRAY 28C.	Sr-90, Gamma Spec
7-00226	Surface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet west of Location 29.	Cs-137 and Sr-90 were detected at concentrations of 1.81 pCi/g and 0.93 pCi/g (respectively) in surface soils at sample Location 29, near GRAY 29C.	Sr-90, Gamma Spec
7-00226	Subsurface	Located in the HWMF area, near the Interim Storage Facility, approximately 30 feet west of Location 29.	Cs-137 and Sr-90 were detected at concentrations of 1.81 pCi/g and 0.93 pCi/g (respectively) in surface soils at sample Location 29, near GRAY 29C.	Sr-90, Gamma Spec
7-00227	Surface	Located in the Outfall 3 Drainage area, approximately 10 feet northeast of Location 66.	Cs-137 was detected at a concentration of 0.334 pCi/g in subsurface soils at sample Location 66, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Gamma Spec
7-00227	Subsurface	Located in the Outfall 3 Drainage area, approximately 10 feet northeast of Location 66.	Cs-137 was detected at a concentration of 0.334 pCi/g in subsurface soils at sample Location 66, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Gamma Spec
7-00228	Surface	Located in the Outfall 3 Drainage area, approximately 20 feet west of Location 66.	Cs-137 was detected at a concentration of 0.334 pCi/g in subsurface soils at sample Location 66, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Gamma Spec
7-00228	Subsurface	Located in the Outfall 3 Drainage area, approximately 20 feet west of Location 66.	Cs-137 was detected at a concentration of 0.334 pCi/g in subsurface soils at sample Location 66, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Gamma Spec
7-00229	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 67.	Sr-90 was detected at a concentration of 2.11 pCi/g in surface soils at sample Location 67, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Sr-90
7-00229	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 67.	Sr-90 was detected at a concentration of 2.11 pCi/g in surface soils at sample Location 67, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Sr-90
7-00230	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet southwest of Location 67.	Sr-90 was detected at a concentration of 2.11 pCi/g in surface soils at sample Location 67, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Sr-90
7-00230	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet southwest of Location 67.	Sr-90 was detected at a concentration of 2.11 pCi/g in surface soils at sample Location 67, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Sr-90
7-00231	Surface	Located in the Outfall 3 Drainage area, approximately 20 feet southeast of Location 67.	Sr-90 was detected at a concentration of 2.11 pCi/g in surface soils at sample Location 67, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Sr-90
7-00231	Subsurface	Located in the Outfall 3 Drainage area, approximately 20 feet southeast of Location 67.	Sr-90 was detected at a concentration of 2.11 pCi/g in surface soils at sample Location 67, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Sr-90
7-00232	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet southeast of Location 66.	Cs-137 was detected at a concentration of 0.334 pCi/g in subsurface soils at sample Location 66, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00232	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet southeast of Location 66.	Cs-137 was detected at a concentration of 0.334 pCi/g in subsurface soils at sample Location 66, aerial photo feature "Debris Area" and gamma scanning survey indicates slightly elevated gamma readings.	Gamma Spec
7-00233	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet north and down slope of Location 141.	Cs-137 was detected at a concentration of 0.791 pCi/g in surface soils at sample Location 141, near GRAY 23C, aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00234	Surface	Located in the Outfall 3 Drainage area, approximately 25 feet southwest of Location 141 and southeast of Location 23.	Cs-137 was detected at a concentration of 0.791 pCi/g in surface soils at sample Location 141, near GRAY 23C, aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00235	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet south of Location 142 and 15 feet southeast of Location 23.	Cs-137 was detected at concentrations of 1.16 and 0.803 pCi/g in surface soils at sample Locations 23 and 142, near GRAY 23C.	Sr-90, Gamma Spec
7-00236	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 23 and 15 feet northeast of Location 142.	Cs-137 was detected at concentrations of 1.16 and 0.803 pCi/g in surface soils at sample Locations 23 and 142, near GRAY 23C.	Sr-90, Gamma Spec
7-00237	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet northwest of Location 143.	Cs-137 and Sr-90 were detected at concentrations of 0.223 pCi/g and 0.983 pCi/g (respectively) in surface soils at sample Location 143.	Sr-90, Gamma Spec
7-00238	Drainage	Located in the Outfall 3 Drainage area, in drainage down slope and northwest of Locations 23, 142 and 143.	Cs-137 was detected at concentrations of 1.16, 0.803 and 0.223 pCi/g in surface soils at Locations 23, 142 and 143 respectively, Sr-90 was detected at a concentration of 0.983 pCi/g in surface soils at Location 143.	Sr-90, Gamma Spec
7-00238	Subsurface	Located in the Outfall 3 Drainage area, in drainage down slope and northwest of Locations 23, 142 and 143.	Cs-137 was detected at concentrations of 1.16, 0.803 and 0.223 pCi/g in surface soils at Locations 23, 142 and 143 respectively, Sr-90 was detected at a concentration of 0.983 pCi/g in surface soils at Location 143.	Sr-90, Gamma Spec
7-00239	Subsurface	Located in the Outfall 3 Drainage area, approximately 20 feet southeast of Location 57, approximately 50 feet northwest of Location 55 and approximately 60 feet north of Location 54.	Sr-90 was detected at a concentration of 0.489 pCi/g in subsurface soils at sample Location 57, Cs-137 was detected at concentrations of 1.42 and 0.399 pCi/g in surface soils at sample Locations 54 and 55, geophysical anomaly "terrain conductivity".	Sr-90, Gamma Spec
7-00240	Subsurface	Located in the Outfall 3 Drainage area, approximately 20 feet southeast of Location 56, approximately 15 feet south of Location 57, approximately 50 feet northwest of Location 55 and 60 feet north of Location 54.	Sr-90 was detected at a concentration of 0.489 pCi/g in subsurface soils at sample Location 57, Cs-137 was detected at concentrations of 1.42 and 0.399 pCi/g in surface soils at sample Locations 54 and 55, geophysical anomaly "terrain conductivity".	Sr-90, Gamma Spec
7-00241	Subsurface	Located in the Outfall 3 Drainage area, approximately 20 feet southwest of Location 56 and down slope and north of Location 20.	Cs-137 was detected at a concentration of 0.234 pCi/g in surface soils at sample Location 20, Sr-90 was detected at a concentration of 0.83 pCi/g in subsurface soils at sample Location 56, near PGRAY 20C, geophysical anomaly "terrain conductivity".	Sr-90, Gamma Spec
7-00242	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet northeast of Location 174.	Sr-90 was detected at a concentration of 1.3 pCi/g in subsurface soils at sample Location 174.	Sr-90, Gamma Spec
7-00243	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 174.	Sr-90 was detected at a concentration of 1.3 pCi/g in subsurface soils at sample Location 174.	Sr-90
7-00244	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet southwest of Location 174.	Sr-90 was detected at a concentration of 1.3 pCi/g in subsurface soils at sample Location 174.	Sr-90, Gamma Spec
7-00245	Subsurface	Located in the Outfall 3 Drainage area, approximately 30 feet north of Location 20 and 15 feet south of Location 174.	Sr-90 was detected at a concentration of 1.3 pCi/g in subsurface soils at sample Location 174, Cs-137 was detected at a concentration of 0.234 pCi/g in surface soils at Location 20, near PGRAY 20C.	Sr-90, Gamma Spec
7-00246	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet east of Location 20.	Cs-137 was detected at a concentration of 0.234 pCi/g in surface soils at sample Location 20, horizontally delineate Likely Chemical Remediation Zone to the east.	Gamma Spec
7-00247	Surface	Located in the Outfall 3 Drainage area, approximately 20 feet west of Location 20.	Cs-137 was detected at a concentration of 0.234 pCi/g in surface soils at sample Location 20, horizontally delineate Likely Chemical Remediation Zone to the east.	Gamma Spec
7-00248	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet east of Location 140 and 25 feet northeast of Location 16.	Cs - 137 and Sr-90 were detected at concentrations of 0.21 pCi/g and 0.996 pCi/g in surface soils and Cs-137 at a concentration of 0.283 pCi/g in subsurface soils at sample Location 140, Cs - 137 and Sr-90 were detected at concentrations of 1.71 pCi/g and 2.22 pCi/g in subsurface soils and Cs-137 at a concentration of 1.08 pCi/g in surface soils at sample Location 16, near GRAY 16C and GRAY 23C, and an aerial photo feature "Debris Area".	Sr-90, Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00248	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet east of Location 140 and 25 feet northeast of Location 16.	Cs - 137 and Sr-90 were detected at concentrations of 0.21 pCi/g and 0.996 pCi/g in surface soils and Cs-137 at a concentration of 0.283 pCi/g in subsurface soils at sample Location 140, Cs - 137 and Sr-90 were detected at concentrations of 1.71 pCi/g and 2.22 pCi/g in subsurface soils and Cs-137 at a concentration of 1.08 pCi/g in surface soils at sample Location 16, near GRAY 16C and GRAY 23C, and an aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00249	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 140 and 20 feet northeast of Location 16.	Cs - 137 and Sr-90 were detected at concentrations of 0.21 pCi/g and 0.996 pCi/g in surface soils and Cs-137 at a concentration of 0.283 pCi/g in subsurface soils at sample Location 140, Cs - 137 and Sr-90 were detected at concentrations of 1.71 pCi/g and 2.22 pCi/g in subsurface soils and Cs-137 at a concentration of 1.08 pCi/g in surface soils at sample Location 16, near GRAY 16C and GRAY 23C, and an aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00249	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 140 and 20 feet northeast of Location 16.	Cs - 137 and Sr-90 were detected at concentrations of 0.21 pCi/g and 0.996 pCi/g in surface soils and Cs-137 at a concentration of 0.283 pCi/g in subsurface soils at sample Location 140, Cs - 137 and Sr-90 were detected at concentrations of 1.71 pCi/g and 2.22 pCi/g in subsurface soils and Cs-137 at a concentration of 1.08 pCi/g in surface soils at sample Location 16, near GRAY 16C and GRAY 23C, and an aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00250	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 15 and 139.	Cs-137 and Sr-90 were detected at concentrations of 4.7 pCi/g and 14.3 pCi/g (respectively) in surface soils at sample Location 15, Cs-137 and Sr-90 were detected at concentrations of 0.387 pCi/g and 1.25 pCi/g (respectively) in surface soils and 2.64 pCi/g and 3.36 pCi/g (respectively) in subsurface soils at Location 139, and near GRAY 15C.	Sr-90, Gamma Spec
7-00250	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 15 and 139.	Cs-137 and Sr-90 were detected at concentrations of 4.7 pCi/g and 14.3 pCi/g (respectively) in surface soils at sample Location 15, Cs-137 and Sr-90 were detected at concentrations of 0.387 pCi/g and 1.25 pCi/g (respectively) in surface soils and 2.64 pCi/g and 3.36 pCi/g (respectively) in subsurface soils at Location 139, and near GRAY 15C.	Sr-90, Gamma Spec
7-00251	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet west of Location 15 and 139.	Cs-137 and Sr-90 were detected at concentrations of 4.7 pCi/g and 14.3 pCi/g (respectively) in surface soils at sample Location 15, Cs-137 and Sr-90 were detected at concentrations of 0.387 pCi/g and 1.25 pCi/g (respectively) in surface soils and 2.64 pCi/g and 3.36 pCi/g (respectively) in subsurface soils at Location 139, and near GRAY 15C.	Sr-90, Gamma Spec
7-00251	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet west of Location 15 and 139.	Cs-137 and Sr-90 were detected at concentrations of 4.7 pCi/g and 14.3 pCi/g (respectively) in surface soils at sample Location 15, Cs-137 and Sr-90 were detected at concentrations of 0.387 pCi/g and 1.25 pCi/g (respectively) in surface soils and 2.64 pCi/g and 3.36 pCi/g (respectively) in subsurface soils at Location 139, and near GRAY 15C.	Sr-90, Gamma Spec
7-00252	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet south of Location 139.	Cs-137 and Sr-90 were detected at concentrations of 4.7 pCi/g and 14.3 pCi/g (respectively) in surface soils at sample Location 15, Cs-137 and Sr-90 were detected at concentrations of 0.387 pCi/g and 1.25 pCi/g (respectively) in surface soils and 2.64 pCi/g and 3.36 pCi/g (respectively) in subsurface soils at Location 139, and near GRAY 15C.	Sr-90, Gamma Spec
7-00252	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet south of Location 139.	Cs-137 and Sr-90 were detected at concentrations of 4.7 pCi/g and 14.3 pCi/g (respectively) in surface soils at sample Location 15, Cs-137 and Sr-90 were detected at concentrations of 0.387 pCi/g and 1.25 pCi/g (respectively) in surface soils and 2.64 pCi/g and 3.36 pCi/g (respectively) in subsurface soils at Location 139, and near GRAY 15C.	Sr-90, Gamma Spec
7-00253	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet south of Location 16 and southwest of Location 140.	Cs - 137 and Sr-90 were detected at concentrations of 0.21 pCi/g and 0.996 pCi/g in surface soils and Cs-137 at a concentration of 0.283 pCi/g in subsurface soils at sample Location 140, Cs - 137 and Sr-90 were detected at concentrations of 1.71 pCi/g and 2.22 pCi/g in subsurface soils and Cs-137 at a concentration of 1.08 pCi/g in surface soils at sample Location 16, near GRAY 16C and GRAY 23C, aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00253	Subsurface	Located in the Outfall 3 Drainage area, approximately 15 feet south of Location 16 and southwest of Location 140.	Cs - 137 and Sr-90 were detected at concentrations of 0.21 pCi/g and 0.996 pCi/g in surface soils and Cs-137 at a concentration of 0.283 pCi/g in subsurface soils at sample Location 140, Cs - 137 and Sr-90 were detected at concentrations of 1.71 pCi/g and 2.22 pCi/g in subsurface soils and Cs-137 at a concentration of 1.08 pCi/g in surface soils at sample Location 16, near GRAY 16C and GRAY 23C, aerial photo feature "Debris Area".	Sr-90, Gamma Spec
7-00254	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet northwest of Location 13 and 12, and 20 feet east of Location 11.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec
7-00255	Surface	Located in the Outfall 3 Drainage area, approximately 25 feet north of Location 11.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00256	Surface	Located in the Outfall 3 Drainage area, approximately 25 feet west of Location 12.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec
7-00257	Surface	Located north of the RMHF, approximately 50 feet southwest of Location 12.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec
7-00257	Subsurface	Located north of the RMHF, approximately 50 feet southwest of Location 12.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec
7-00258	Surface	Located in the Outfall 3 Drainage area, approximately 40 feet northwest of Location 11.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec
7-00258	Subsurface	Located in the Outfall 3 Drainage area, approximately 40 feet northwest of Location 11.	Cs-137 was detected at concentrations of 1.75, 1.14, 2.77 pCi/g in surface soils at Locations 11,12 and 13 (respectively), Sr-90 was also detected at a concentration of 0.498 pCi/g at sample Location 13, near GRAY 11C, 12C and 13C and an aerial photo feature "Graded".	Sr-90, Gamma Spec
7-00259	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet east of Location 181.	Sr-90 was detected at a concentration of 0.977 pCi/g in surface soils at sample Location 181.	Sr-90
7-00260	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet north of Location 181.	Sr-90 was detected at a concentration of 0.977 pCi/g in surface soils at sample Location 181.	Sr-90
7-00261	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet west of Location 181.	Sr-90 was detected at a concentration of 0.977 pCi/g in surface soils at sample Location 181.	Sr-90
7-00262	Surface	Located in the Outfall 3 Drainage area, approximately 15 feet south of Location 181.	Sr-90 was detected at a concentration of 0.977 pCi/g in surface soils at sample Location 181.	Sr-90
7-00263	Surface	Located north of the RMHF, approximately 60 feet north and down slope of Location 157 at the toe of slope.	Cs-137 and Sr-90 were detected at concentrations of 2.01 pCi/g and 0.557 pCi/g in surface soils, Cs-137 was detected at a concentration of 0.232 pCi/g in subsurface soil at sample Location 157.	Sr-90, Gamma Spec
7-00263	Subsurface	Located north of the RMHF, approximately 60 feet north and down slope of Location 157 at the toe of slope.	Cs-137 and Sr-90 were detected at concentrations of 2.01 pCi/g and 0.557 pCi/g in surface soils, Cs-137 was detected at a concentration of 0.232 pCi/g in subsurface soil at sample Location 157.	Sr-90, Gamma Spec
7-00264	Surface	Located east of the RMHF, approximately 25 feet northwest of Location 24.	Cs-137 was detected at concentrations of 0.25 pCi/g in surface soils at sample Location 24, near GRAY 24C	Gamma Spec
7-00265	Surface	Located east of the RMHF, approximately 10 feet north of Location 24.	Cs-137 was detected at concentrations of 0.25 pCi/g in surface soils at sample Location 24, near GRAY 24C	Gamma Spec
7-00266	Surface	Located south of the RMHF, approximately 15 feet southwest of Location 96, approximately 25 feet southwest of Location 18 and 30 feet southeast of Location 95 at toe of slope.	Cs-137 was detected at concentrations of 0.611, 1.78 and 0.344 pCi/g in surface soils at Locations 18, 95, and 96 (respectively), down slope of GRAY 18C and GRAY 14C.	Gamma Spec
7-00266	Subsurface	Located south of the RMHF, approximately 15 feet southwest of Location 96, approximately 25 feet southwest of Location 18 and 30 feet southeast of Location 95 at toe of slope.	Cs-137 was detected at concentrations of 0.611, 1.78 and 0.344 pCi/g in surface soils at Locations 18, 95, and 96 (respectively), down slope of GRAY 18C and GRAY 14C.	Gamma Spec
7-00267	Surface	Located south of the RMHF, approximately 45 feet southeast of Location 91 and approximately 45 feet southwest of Location 10 at toe of slope.	Cs-137 was detected at concentrations of 0.86 pCi/g and 9.21 pCi/g in surface soils at sample Locations 91 and 10, Sr-90 was detected at a concentration of 1.19 pCi/g in surface soils at sample Location 10, Cs-137 was detected at a concentration of 0.524 pCi/g in subsurface soils at sample Location 10, down slope of GRAY 10C.	Sr-90, Gamma Spec
7-00267	Subsurface	Located south of the RMHF, approximately 45 feet southeast of Location 91 and approximately 45 feet southwest of Location 10 at toe of slope.	Cs-137 was detected at concentrations of 0.86 pCi/g and 9.21 pCi/g in surface soils at sample Locations 91 and 10, Sr-90 was detected at a concentration of 1.19 pCi/g in surface soils at sample Location 10, Cs-137 was detected at a concentration of 0.524 pCi/g in subsurface soils at sample Location 10, down slope of GRAY 10C.	Sr-90, Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00268	Surface	Located east of the RMHF Holding Pond, approximately 20 feet southwest of Location 8.	Cs-137 was detected at concentrations of 0.968 and 0.359 pCi/g in the surface and subsurface soils (respectively) at sample Location 8, near GRAY 8C and horizontally delineate a Likely Chemical Remediation Zone	Gamma Spec
7-00268	Subsurface	Located east of the RMHF Holding Pond, approximately 20 feet southwest of Location 8.	Cs-137 was detected at concentrations of 0.968 and 0.359 pCi/g in the surface and subsurface soils (respectively) at sample Location 8, near GRAY 8C and horizontally delineate a Likely Chemical Remediation Zone	Gamma Spec
7-00269	Surface	Located northeast of the RMHF Holding Pond, approximately 45 feet northwest of Location 7.	Cs-137 was detected at concentrations of 2.84 and 0.407 pCi/g in the surface and subsurface soils (respectively) at sample Location 7, down slope of GRAY 7C.	Gamma Spec
7-00269	Subsurface	Located northeast of the RMHF Holding Pond, approximately 45 feet northwest of Location 7.	Cs-137 was detected at concentrations of 2.84 and 0.407 pCi/g in the surface and subsurface soils (respectively) at sample Location 7, down slope of GRAY 7C.	Gamma Spec
7-00270	Surface	Located east of the RMHF Holding Pond, approximately 30 feet west of Location 90 and Location 7.	Cs-137 was detected at concentrations of 2.84 and 0.407 pCi/g in the surface and subsurface soils (respectively) at sample Location 7, Cs-137 was detected at concentrations of 6.52 and 0.492 pCi/g in the surface and subsurface soils (respectively) and Pu-239/240 was detected at a concentration of 0.0475 pCi/g at sample Location 90.	Gamma Spec + Pu Default, Np-237
7-00270	Subsurface	Located east of the RMHF Holding Pond, approximately 30 feet west of Location 90 and Location 7.	Cs-137 was detected at concentrations of 2.84 and 0.407 pCi/g in the surface and subsurface soils (respectively) at sample Location 7, Cs-137 was detected at concentrations of 6.52 and 0.492 pCi/g in the surface and subsurface soils (respectively) and Pu-239/240 was detected at a concentration of 0.0475 pCi/g at sample Location 90.	Gamma Spec + Pu Default, Np-237
7-00271	Surface	Located east of the RMHF Holding Pond, approximately 15 feet northwest of Location 5.	Cs-137 was detected at a concentration of 1.38 pCi/g in subsurface and Sr-90 a concentration of 1.69 pCi/g in surface soils at sample Location 5, near GRAY 5C.	Sr-90, Gamma Spec
7-00271	Subsurface	Located east of the RMHF Holding Pond, approximately 15 feet northwest of Location 5.	Cs-137 was detected at a concentration of 1.38 pCi/g in subsurface and Sr-90 a concentration of 1.69 pCi/g in surface soils at sample Location 5, near GRAY 5C.	Sr-90, Gamma Spec
7-00272	Surface	Located east of the RMHF Holding Pond, approximately 20 feet northeast of Location 129.	Cs-137 was detected at a concentration of 0.464 pCi/g in surface soils at sample Location 129, location of 4 inch cast iron drain pipe from RMHF.	Gamma Spec
7-00272	Subsurface	Located east of the RMHF Holding Pond, approximately 20 feet northeast of Location 129.	Cs-137 was detected at a concentration of 0.464 pCi/g in surface soils at sample Location 129, location of 4 inch cast iron drain pipe from RMHF.	Gamma Spec
7-00273	Surface	Located east of the RMHF Holding Pond, approximately 20 feet northwest of Location 129.	Cs-137 was detected at a concentration of 0.464 pCi/g in surface soils at sample Location 129, location of 4 inch cast iron drain pipe from RMHF.	Gamma Spec
7-00273	Subsurface	Located east of the RMHF Holding Pond, approximately 20 feet northwest of Location 129.	Cs-137 was detected at a concentration of 0.464 pCi/g in surface soils at sample Location 129, location of 4 inch cast iron drain pipe from RMHF.	Gamma Spec
7-00274	Surface	Located north of the RMHF Holding Pond, approximately 25 feet northeast of Location 138.	Cs-137 was detected at concentrations of 2.5, 1.05, 0.865 pCi/g in surface soils at sample Locations 3, 137 and 138 (respectively), Sr-90 was detected at a concentration of 3.57 pCi/g in subsurface soils at sample Location 3, near GRAY 3C and GRAY 16C, horizontally delineate Likely Chemical Remediation Zone.	Sr-90, Gamma Spec
7-00274	Subsurface	Located north of the RMHF Holding Pond, approximately 25 feet northeast of Location 138.	Cs-137 was detected at concentrations of 2.5, 1.05, 0.865 pCi/g in surface soils at sample Locations 3, 137 and 138 (respectively), Sr-90 was detected at a concentration of 3.57 pCi/g in subsurface soils at sample Location 3, near GRAY 3C and GRAY 16C, horizontally delineate Likely Chemical Remediation Zone.	Sr-90, Gamma Spec
7-00275	Surface	Located north of the RMHF Holding Pond, approximately 20 feet north of Location 138.	Cs-137 was detected at concentrations of 2.5, 1.05, 0.865 pCi/g in surface soils at sample Locations 3, 137 and 138 (respectively), Sr-90 was detected at a concentration of 3.57 pCi/g in subsurface soils at sample Location 3, near GRAY 3C and GRAY 16C, horizontally delineate Likely Chemical Remediation Zone.	Sr-90, Gamma Spec
7-00275	Subsurface	Located north of the RMHF Holding Pond, approximately 20 feet north of Location 138.	Cs-137 was detected at concentrations of 2.5, 1.05, 0.865 pCi/g in surface soils at sample Locations 3, 137 and 138 (respectively), Sr-90 was detected at a concentration of 3.57 pCi/g in subsurface soils at sample Location 3, near GRAY 3C and GRAY 16C, horizontally delineate Likely Chemical Remediation Zone.	Sr-90, Gamma Spec
7-00276	Surface	Located north of the RMHF Holding Pond, approximately 30 feet west of Location 138.	Cs-137 was detected at concentrations of 2.5, 1.05, 0.865 pCi/g in surface soils at sample Locations 3, 137 and 138 (respectively), Sr-90 was detected at a concentration of 3.57 pCi/g in subsurface soils at sample Location 3, near GRAY 3C and GRAY 16C, horizontally delineate Likely Chemical Remediation Zone.	Sr-90, Gamma Spec

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00276	Subsurface	Located north of the RMHF Holding Pond, approximately 30 feet west of Location 138.	Cs-137 was detected at concentrations of 2.5, 1.05, 0.865 pCi/g in surface soils at sample Locations 3, 137 and 138 (respectively), Sr-90 was detected at a concentration of 3.57 pCi/g in subsurface soils at sample Location 3, near GRAY 3C and GRAY 16C, horizontally delineate Likely Chemical Remediation Zone.	Sr-90, Gamma Spec
7-00277	Surface	Located west of the RMHF Holding Pond, approximately 40 feet west of Location 2.	Cs-137 was detected at a concentration of 0.432 pCi/g in subsurface soils at sample Location 2, near PGRAY 2C, horizontally delineate Likely Chemical Remediation Zone.	Gamma Spec
7-00277	Subsurface	Located west of the RMHF Holding Pond, approximately 40 feet west of Location 2.	Cs-137 was detected at a concentration of 0.432 pCi/g in subsurface soils at sample Location 2, near PGRAY 2C, horizontally delineate Likely Chemical Remediation Zone.	Gamma Spec
7-00278	Surface	Located south of the RMHF Holding Pond, approximately 25 feet east of Location 50 and approximately 35 feet southeast of Location 135.	Cs-137 was detected at concentrations of 0.763 pCi/g and 1.33 pCi/g in surface soils at sample Locations 50 and 135, Pu-239/240 was also detected at a concentration of 0.0702 pCi/g in surface soils at sample Location 135, Sr-90 was detected at a concentration of 3.55 pCi/g in the subsurface at soils sample Location 135, near GRAY 4C, horizontally delineate Likely Chemical Remediation Zone.	Gamma Spec, Sr-90, Pu Default, Np-237
7-00278	Subsurface	Located south of the RMHF Holding Pond, approximately 25 feet east of Location 50 and approximately 35 feet southeast of Location 135.	Cs-137 was detected at concentrations of 0.763 pCi/g and 1.33 pCi/g in surface soils at sample Locations 50 and 135, Pu-239/240 was also detected at a concentration of 0.0702 pCi/g in surface soils at sample Location 135, Sr-90 was detected at a concentration of 3.55 pCi/g in the subsurface at soils sample Location 135, near GRAY 4C, horizontally delineate Likely Chemical Remediation Zone.	Gamma Spec, Sr-90, Pu Default, Np-237
7-00279	Surface	Located southeast of the RMHF Holding Pond, approximately 40 feet east of Location 50 and 40 feet south of Location 51.	Cs-137 was detected at concentrations 0.763 and 0.493 pCi/g in surface soils at sample Locations 50 and 51.	Gamma Spec
7-00279	Subsurface	Located southeast of the RMHF Holding Pond, approximately 40 feet east of Location 50 and 40 feet south of Location 51.	Cs-137 was detected at concentrations 0.763 and 0.493 pCi/g in surface soils at sample Locations 50 and 51.	Gamma Spec
7-00280	Surface	Located east of the RMHF Holding Pond, approximately 35 feet southwest of Locations 6 and 46 and 40 feet southeast of Location 51.	Cs-137 was detected at concentrations 0.24 and 0.493 pCi/g in surface soils at sample Locations 6 and 51, Sr-90 was detected at a concentration of 1.64 pCi/g in surface soils at sample Location 46, historical data shows elevated concentrations of radionuclides at Location 46, and near PGRAY 6C.	Sr-90, Gamma Spec
7-00280	Subsurface	Located east of the RMHF Holding Pond, approximately 35 feet southwest of Locations 6 and 46 and 40 feet southeast of Location 51.	Cs-137 was detected at concentrations 0.24 and 0.493 pCi/g in surface soils at sample Locations 6 and 51, Sr-90 was detected at a concentration of 1.64 pCi/g in surface soils at sample Location 46, historical data shows elevated concentrations of radionuclides at Location 46, and near PGRAY 6C.	Sr-90, Gamma Spec
7-00281	Surface	Located east of the RMHF Holding Pond, approximately 25 feet southeast of Location 6 and 30 feet southeast of Location 46.	Cs-137 was detected at a concentration of 0.24 pCi/g in surface soils at sample Location 6, Sr-90 was detected at a concentration of 1.64 pCi/g in surface soils at sample Location 46, historical data shows elevated concentrations of radionuclides at Location 46, and near PGRAY 6C.	Sr-90, Gamma Spec
7-00281	Subsurface	Located east of the RMHF Holding Pond, approximately 25 feet southeast of Location 6 and 30 feet southeast of Location 46.	Cs-137 was detected at a concentration of 0.24 pCi/g in surface soils at sample Location 6, Sr-90 was detected at a concentration of 1.64 pCi/g in surface soils at sample Location 46, historical data shows elevated concentrations of radionuclides at Location 46, and near PGRAY 6C.	Sr-90, Gamma Spec
7-00282	Subsurface	Located in the RMHF Holding Pond area, west of the former Shield Test Irradiation Reactor building, approximately 15 feet northwest of Location 108.	Sr-90 was detected at a concentration of 0.524 pCi/g in subsurface soils at sample Location 108, former Location of test vault associated with former Building 4028 (Shield Test Irradiation Reactor).	Sr-90
7-00283	Subsurface	Located in the RMHF Holding Pond area, west of the former Shield Test Irradiation Reactor building, approximately 15 feet southwest of Location 108.	Sr-90 was detected at a concentration of 0.524 pCi/g in subsurface soils at sample Location 108, former Location of test vault associated with former Building 4028 (Shield Test Irradiation Reactor).	Sr-90
7-00284	Surface	Located south of the RMHF Holding Pond, approximately 20 feet north of Location 42 at outflow of corrugated metal pipe.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90
7-00284	Subsurface	Located south of the RMHF Holding Pond, approximately 20 feet north of Location 42 at outflow of corrugated metal pipe.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90
7-00285	Subsurface	Located south of the RMHF Holding Pond, approximately 15 feet east of Location 42.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90

Table 1
Summary of Soil Sample Locations
Subarea 7, Round 2

Location Identification	Sample Type	Location Description	Technical Justification	Analytical Suite
7-00286	Surface	Located south of the RMHF Holding Pond, approximately 20 feet south of Location 42.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90
7-00286	Subsurface	Located south of the Holding Pond, approximately 20 feet south of Location 42.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90
7-00287	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet north of Location 173.	Sr-90 was detected at a concentration of 0.929 pCi/g in subsurface soils at sample Location 173, potential contamination within pile associated with remedial activity at the holding pond.	Sr-90
7-00288	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet west northwest of Location 173.	Sr-90 was detected at a concentration of 0.929 pCi/g in subsurface soils at sample Location 173, potential contamination within pile associated with remedial activity at the holding pond.	Sr-90
7-00289	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet southeast of Location 173.	Sr-90 was detected at a concentration of 0.929 pCi/g in subsurface soils at sample Location 173, potential contamination within pile associated with remedial activity at the holding pond.	Sr-90
7-00290	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet north of Location 117.	Sr-90 was detected at a concentration of 0.833 pCi/g in subsurface soils at sample Location 117, geophysical anomaly "Terrain Conductivity".	Sr-90
7-00291	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet west of Location 117.	Sr-90 was detected at a concentration of 0.833 pCi/g in subsurface soils at sample Location 117, geophysical anomaly "Terrain Conductivity".	Sr-90
7-00292	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet south of Location 117.	Sr-90 was detected at a concentration of 0.833 pCi/g in subsurface soils at sample Location 117, geophysical anomaly "Terrain Conductivity".	Sr-90
7-00293	Subsurface	Located southwest of the RMHF Holding Pond, approximately 15 feet east of Location 117.	Sr-90 was detected at a concentration of 0.833 pCi/g in subsurface soils at sample Location 117, geophysical anomaly "Terrain Conductivity".	Sr-90
7-00294	Subsurface	Located in the Southern Point of Subarea 7, approximately 15 feet northeast of Location 120, north of Building 4019.	Sr-90 was detected at a concentration of 0.517 pCi/g in subsurface soils at sample Location 120, characterize potential contamination resulting from surface water run off from the open storage area associated with Building 4019 and former Building 4013.	Sr-90
7-00295	Subsurface	Located in the Southern Point of Subarea 7, approximately 15 feet northwest of Location 120, north of Building 4019.	Sr-90 was detected at a concentration of 0.517 pCi/g in subsurface soils at sample Location 120, characterize potential contamination resulting from surface water run off from the open storage area associated with Building 4019 and former Building 4013.	Sr-90
7-00296	Subsurface	Located in the Southern Point of Subarea 7, approximately 15 feet southwest of Location 120, north of Building 4019.	Sr-90 was detected at a concentration of 0.517 pCi/g in subsurface soils at sample Location 120, characterize potential contamination resulting from surface water run off from the open storage area associated with Building 4019 and former Building 4013.	Sr-90
7-00297	Drainage	Located south of the RMHF Holding Pond, approximately 100 feet southeast of Location 42 at inflow of corrugated metal pipe.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90
7-00297	Subsurface	Located south of the RMHF Holding Pond, approximately 100 feet southeast of Location 42 at inflow of corrugated metal pipe.	Sr-90 was detected at a concentration of 3.24 pCi/g in subsurface soils at sample Location 42, near PGRAY 42C, corrugated metal pipe could be a potential pathway for contamination.	Sr-90

Notes:

Refer to Table 2.1 of the Final Field Sampling Plan for Soil Sampling (HGL, 2012a) for a definition of radionuclide symbols.

GRAY - gamma radiation anomaly

HWMF - Hazardous Waste Management Facility

pCi/g - picocuries per gram

PGRAY - potential gamma radiation anomaly

RMHF - Radiological Materials Handling Facility

ATTACHMENT 2

Figure 1	Round 1 Sample Locations
Figure 2	Panhandle Area
Figure 3	Building 4133 and Interim Storage Facility - Map 1
Figure 4	Building 4133 and Interim Storage Facility - Map 2
Figure 5	RMHF - Map 1
Figure 6	RMHF - Map 2
Figure 7	RMHF - Map 3
Figure 8	Outfall 3 Drainage - Map 1
Figure 9	Outfall 3 Drainage - Map 2
Figure 10	RMHF Holding Pond - Map 1
Figure 11	RMHF Holding Pond - Map 2
Figure 12	Southern Portion

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Figure 1
Round 1 Sample Locations
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

- Exceed RTLs
 - Round 1 Sample Location**
 - Drainage
 - Subsurface
 - Surface Subsurface
 - Subareas
 - Figure Inset
- Note:**
RTL - Radiological Trigger Level

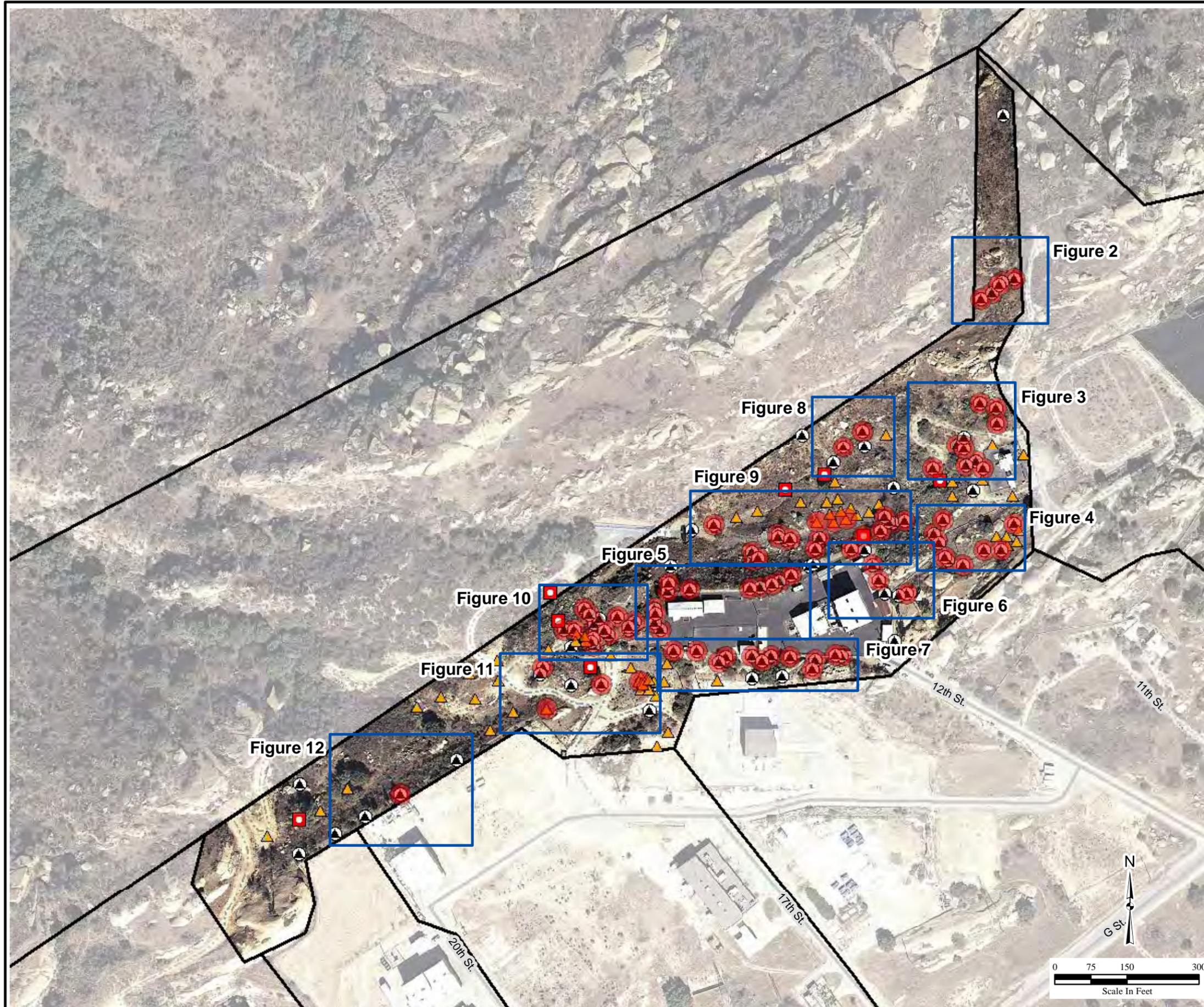


Figure 2
Panhandle Area
Subarea 7, Round 2
Santa Susana Field Laboratory



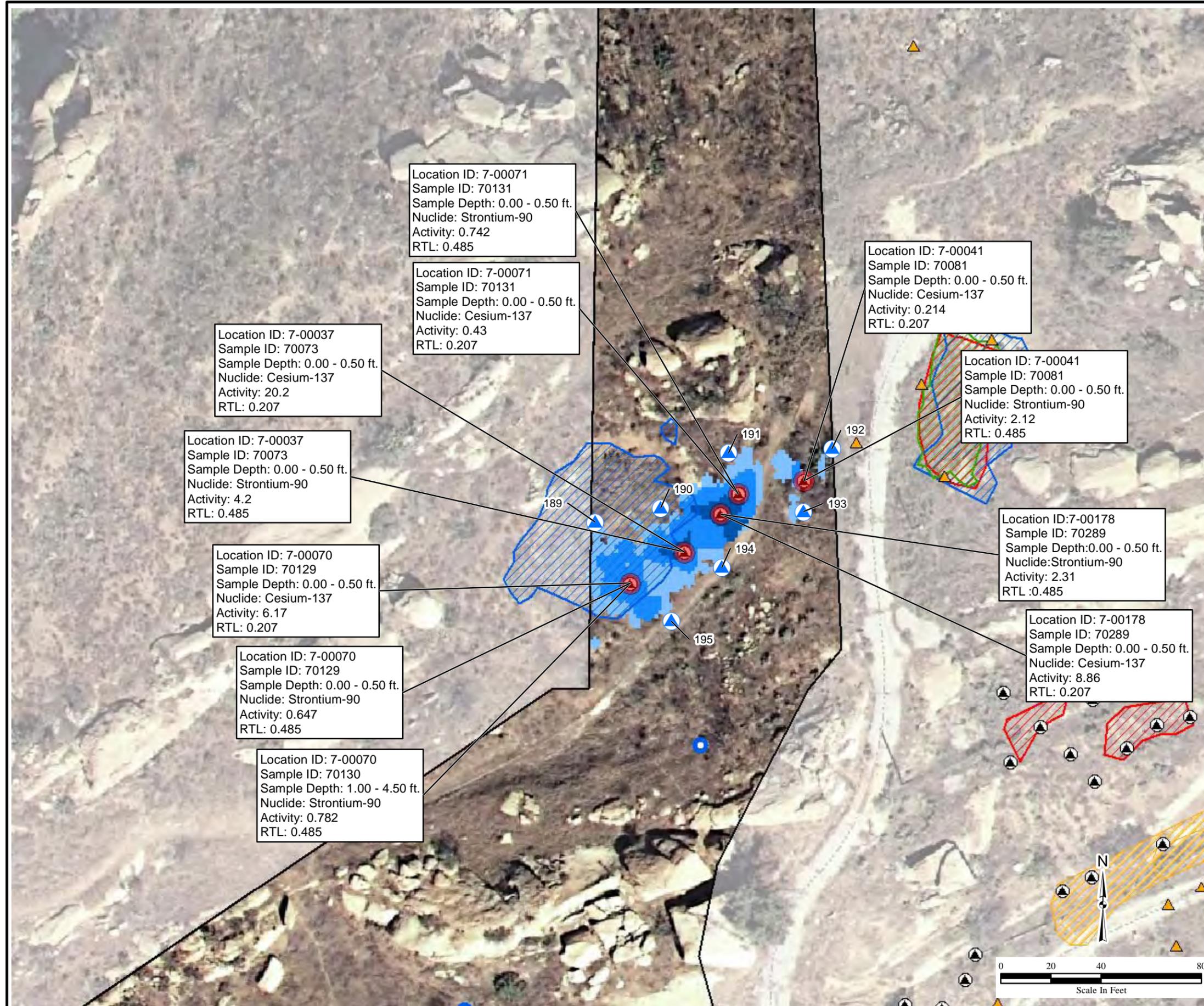
U.S. EPA Region 9

Legend

- Exceed RTLs
- Round 2 Step-out Sample Location**
- ▲ Surface Subsurface
- Round 1 Sample Location**
- ▲ Subsurface
- ▲ Surface Subsurface
- Geophysical Anomalies**
- Ground Penetrating Radar
- Magnetometer
- Terrain Conductivity
- Magnetometer
- Likely Remediation Zones**
- Chemical
- Subareas
- 145 Location ID



Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram



**Figure 3
Building 4133 and
Interim Storage Facility - Map 1
Subarea 7, Round 2
Santa Susana Field Laboratory**

U.S. EPA Region 9



Legend

- Exceed RTLs
 - Round 2 Step-out Sample Location**
 - ▲ Subsurface
 - ▣ Subsurface Drainage
 - ⊕ Surface
 - ◐ Surface Subsurface
 - Round 1 Sample Location**
 - Drainage
 - ▲ Subsurface
 - ▲ Surface Subsurface
 - Geophysical Anomalies**
 - Magnetometer
 - Magnetometer
 - Terrain Conductivity
 - ▨ Ground Penetrating Radar
 - ▨ Ground Penetrating Radar Fill
 - ▨ Magnetometer
 - ▨ Terrain Conductivity
 - Likely Remediation Zones**
 - ▨ Chemical
 - ▨ Decontamination and Decommissioning
 - Subareas
 - 145 Location ID
- Lower Cesium-137 (Activity Ratio) Higher

Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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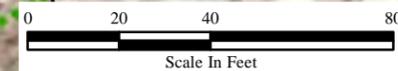
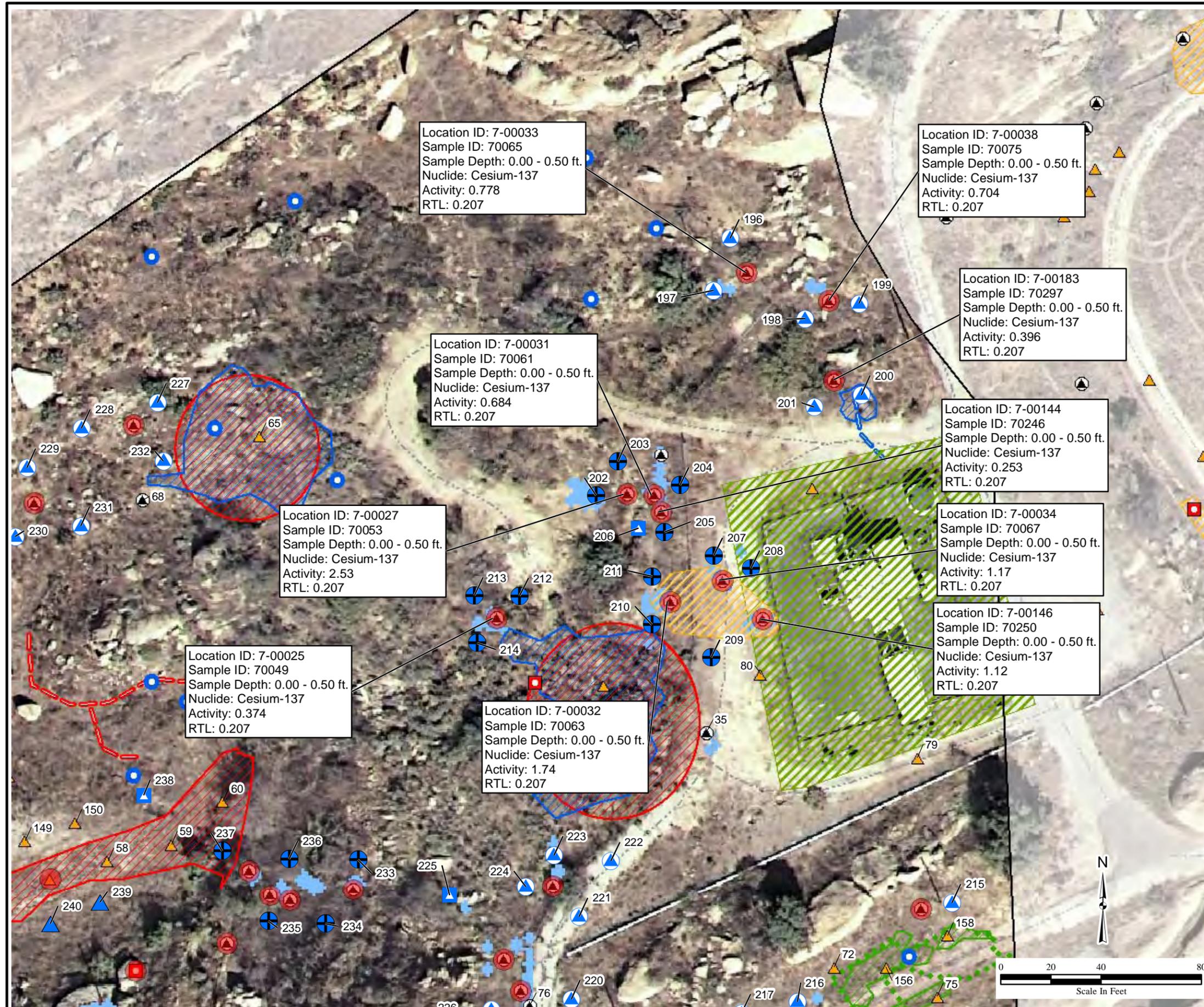


Figure 4
Building 4133 and
Interim Storage Facility - Map 2
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

- Exceed RTLs
- Round 2 Step-out Sample Location**
- ▲ Subsurface
- ▴ Subsurface Drainage
- ⊕ Surface
- Surface Subsurface
- Round 1 Sample Location**
- Drainage
- ▲ Subsurface
- ▲ Surface Subsurface
- Geophysical Anomalies**
- Ground Penetrating Radar
- Magnetometer
- Ground Penetrating Radar
- Terrain Conductivity
- ▨ Ground Penetrating Radar
- ▨ Ground Penetrating Radar Fill
- ▨ Magnetometer
- ▨ Terrain Conductivity
- Likely Remediation Zones**
- ▨ Chemical
- ▨ Decontamination and Decommissioning
- Subareas
- 145 Location ID



Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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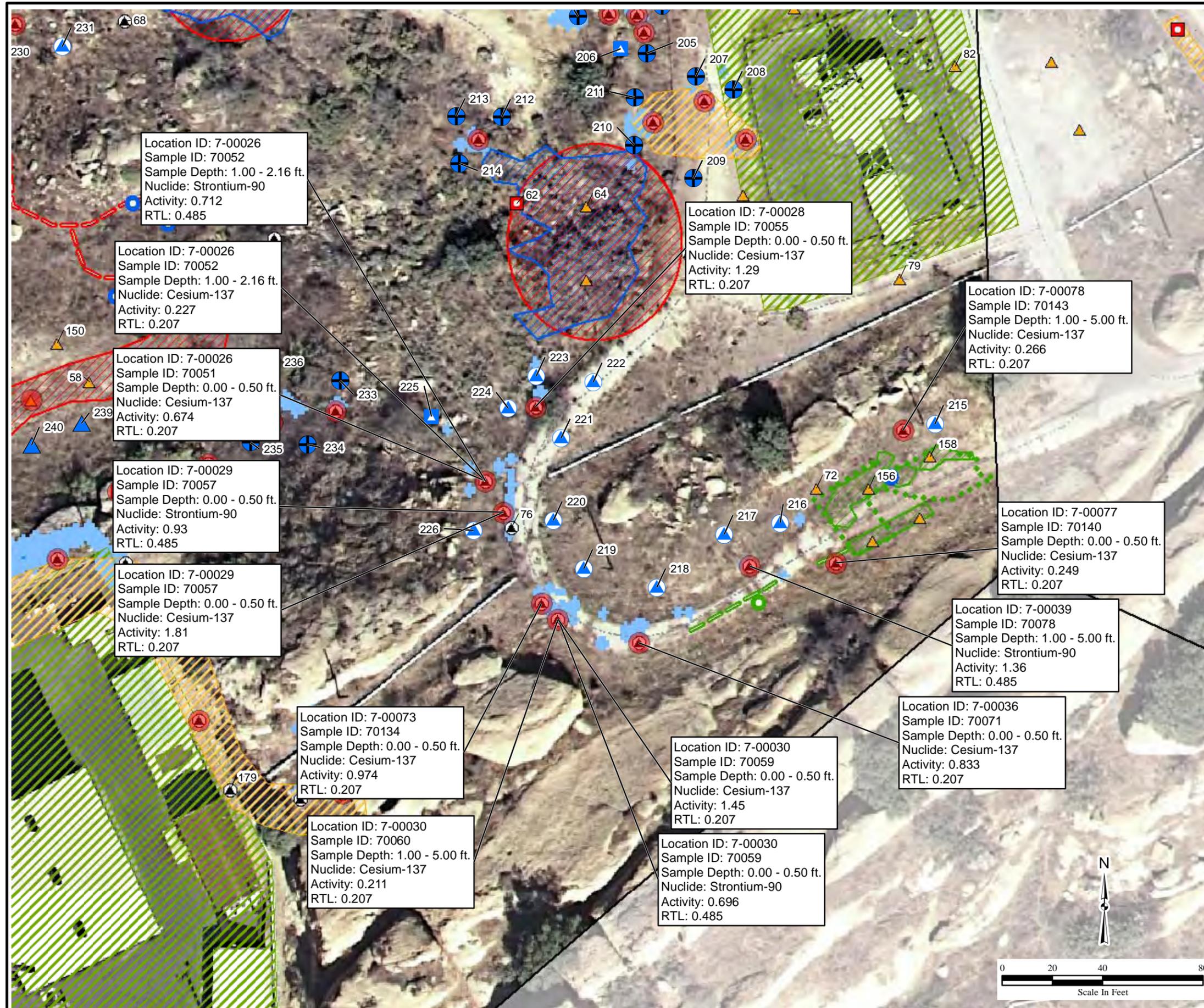


Figure 5
RMHF - Map 1
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9

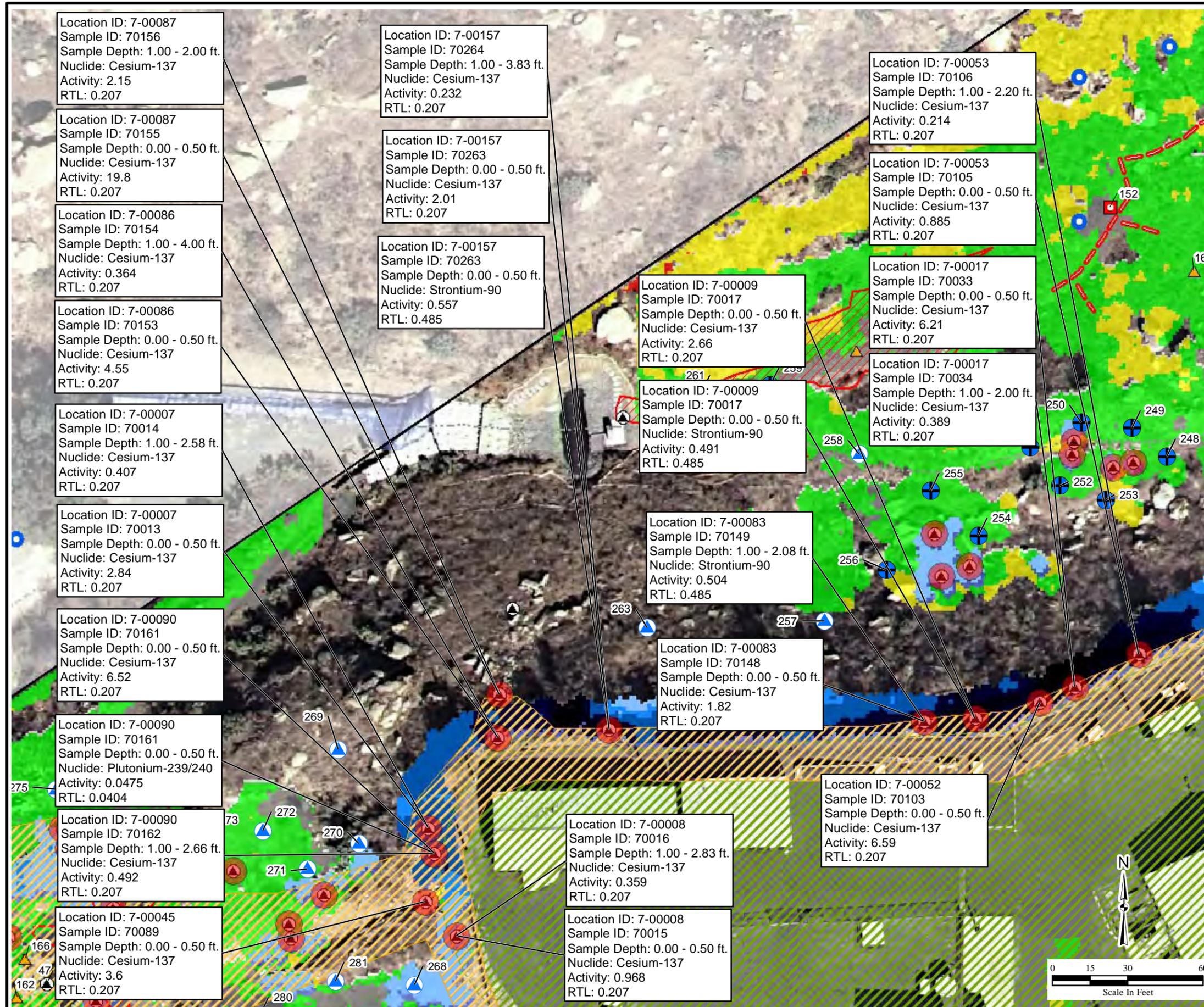


Legend

- Exceed RTLs
- Round 2 Step-out Sample Location**
- ⊕ Surface
- ▲ Surface Subsurface
- Round 1 Sample Location**
- Drainage
- ▲ Subsurface
- ▲ Surface Subsurface
- Geophysical Anomalies**
- Magnetometer
- Terrain Conductivity
- ▨ Terrain Conductivity
- Likely Remediation Zones**
- ▨ Chemical
- ▨ Decontamination and Decommissioning
- Subareas
- 145 Location ID
- Lower Cesium-137 (Activity Ratio) Higher

Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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Location ID: 7-00087
 Sample ID: 70156
 Sample Depth: 1.00 - 2.00 ft.
 Nuclide: Cesium-137
 Activity: 2.15
 RTL: 0.207

Location ID: 7-00157
 Sample ID: 70264
 Sample Depth: 1.00 - 3.83 ft.
 Nuclide: Cesium-137
 Activity: 0.232
 RTL: 0.207

Location ID: 7-00053
 Sample ID: 70106
 Sample Depth: 1.00 - 2.20 ft.
 Nuclide: Cesium-137
 Activity: 0.214
 RTL: 0.207

Location ID: 7-00087
 Sample ID: 70155
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 19.8
 RTL: 0.207

Location ID: 7-00157
 Sample ID: 70263
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 2.01
 RTL: 0.207

Location ID: 7-00053
 Sample ID: 70105
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 0.885
 RTL: 0.207

Location ID: 7-00086
 Sample ID: 70154
 Sample Depth: 1.00 - 4.00 ft.
 Nuclide: Cesium-137
 Activity: 0.364
 RTL: 0.207

Location ID: 7-00157
 Sample ID: 70263
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Strontium-90
 Activity: 0.557
 RTL: 0.485

Location ID: 7-00017
 Sample ID: 70033
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 6.21
 RTL: 0.207

Location ID: 7-00086
 Sample ID: 70153
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 4.55
 RTL: 0.207

Location ID: 7-00009
 Sample ID: 70017
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 2.66
 RTL: 0.207

Location ID: 7-00017
 Sample ID: 70034
 Sample Depth: 1.00 - 2.00 ft.
 Nuclide: Cesium-137
 Activity: 0.389
 RTL: 0.207

Location ID: 7-00007
 Sample ID: 70014
 Sample Depth: 1.00 - 2.58 ft.
 Nuclide: Cesium-137
 Activity: 0.407
 RTL: 0.207

Location ID: 7-00009
 Sample ID: 70017
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Strontium-90
 Activity: 0.491
 RTL: 0.485

Location ID: 7-00007
 Sample ID: 70013
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 2.84
 RTL: 0.207

Location ID: 7-00083
 Sample ID: 70149
 Sample Depth: 1.00 - 2.08 ft.
 Nuclide: Strontium-90
 Activity: 0.504
 RTL: 0.485

Location ID: 7-00090
 Sample ID: 70161
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 6.52
 RTL: 0.207

Location ID: 7-00083
 Sample ID: 70148
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 1.82
 RTL: 0.207

Location ID: 7-00090
 Sample ID: 70161
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Plutonium-239/240
 Activity: 0.0475
 RTL: 0.0404

Location ID: 7-00052
 Sample ID: 70103
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 6.59
 RTL: 0.207

Location ID: 7-00090
 Sample ID: 70162
 Sample Depth: 1.00 - 2.66 ft.
 Nuclide: Cesium-137
 Activity: 0.492
 RTL: 0.207

Location ID: 7-00008
 Sample ID: 70016
 Sample Depth: 1.00 - 2.83 ft.
 Nuclide: Cesium-137
 Activity: 0.359
 RTL: 0.207

Location ID: 7-00045
 Sample ID: 70089
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 3.6
 RTL: 0.207

Location ID: 7-00008
 Sample ID: 70015
 Sample Depth: 0.00 - 0.50 ft.
 Nuclide: Cesium-137
 Activity: 0.968
 RTL: 0.207

Figure 6
RMHF - Map 2
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9



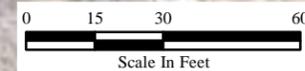
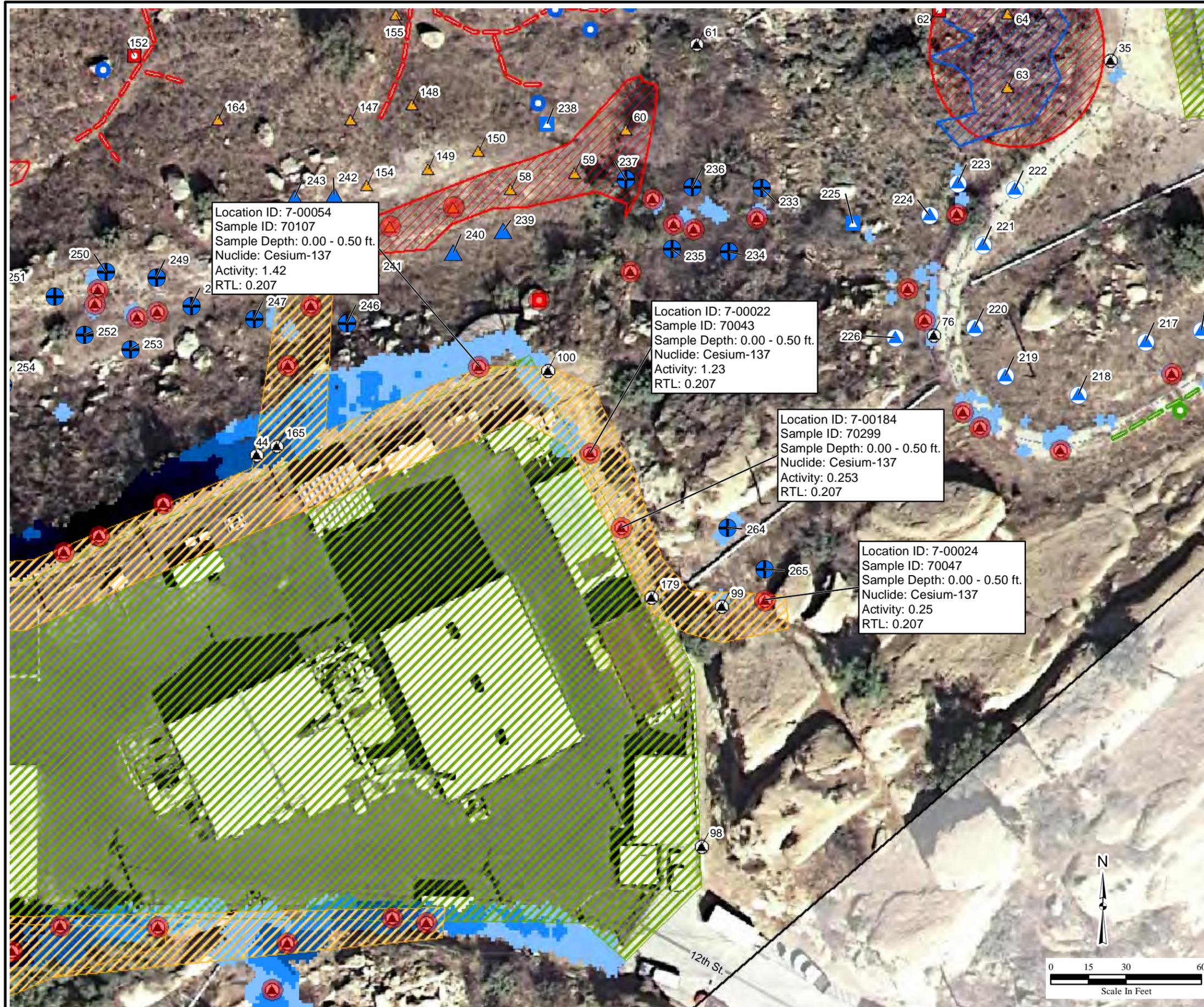
Legend

- Exceed RTLs
 - Round 2 Step-out Sample Location**
 - ▲ Subsurface
 - ▲ Subsurface Drainage
 - ⊕ Surface
 - ▲ Surface Subsurface
 - Round 1 Sample Location**
 - Drainage
 - ▲ Subsurface
 - ▲ Surface Subsurface
 - Geophysical Anomalies**
 - Ground Penetrating Radar
 - Magnetometer
 - Ground Penetrating Radar
 - Terrain Conductivity
 - Magnetometer
 - Terrain Conductivity
 - Likely Remediation Zones**
 - ▨ Chemical
 - ▨ Decontamination and Decommissioning
 - Subareas
 - 145 Location ID
- Cesium-137 (Activity Ratio)

Lower Higher

Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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**Figure 7
RMHF - Map 3
Subarea 7, Round 2
Santa Susana Field Laboratory**

U.S. EPA Region 9



Legend

- Exceed RTLs
- ▲ Round 2 Step-out Sample Location
- ▲ Surface Subsurface
- Round 1 Sample Location**
- ▲ Subsurface
- ▲ Surface Subsurface
- Geophysical Anomalies**
- Terrain Conductivity
- Likely Remediation Zones**
- Chemical
- Decontamination and Decommissioning
- Subareas
- 145 Location ID
- Cesium-137 (Activity Ratio)
- Lower Higher

Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

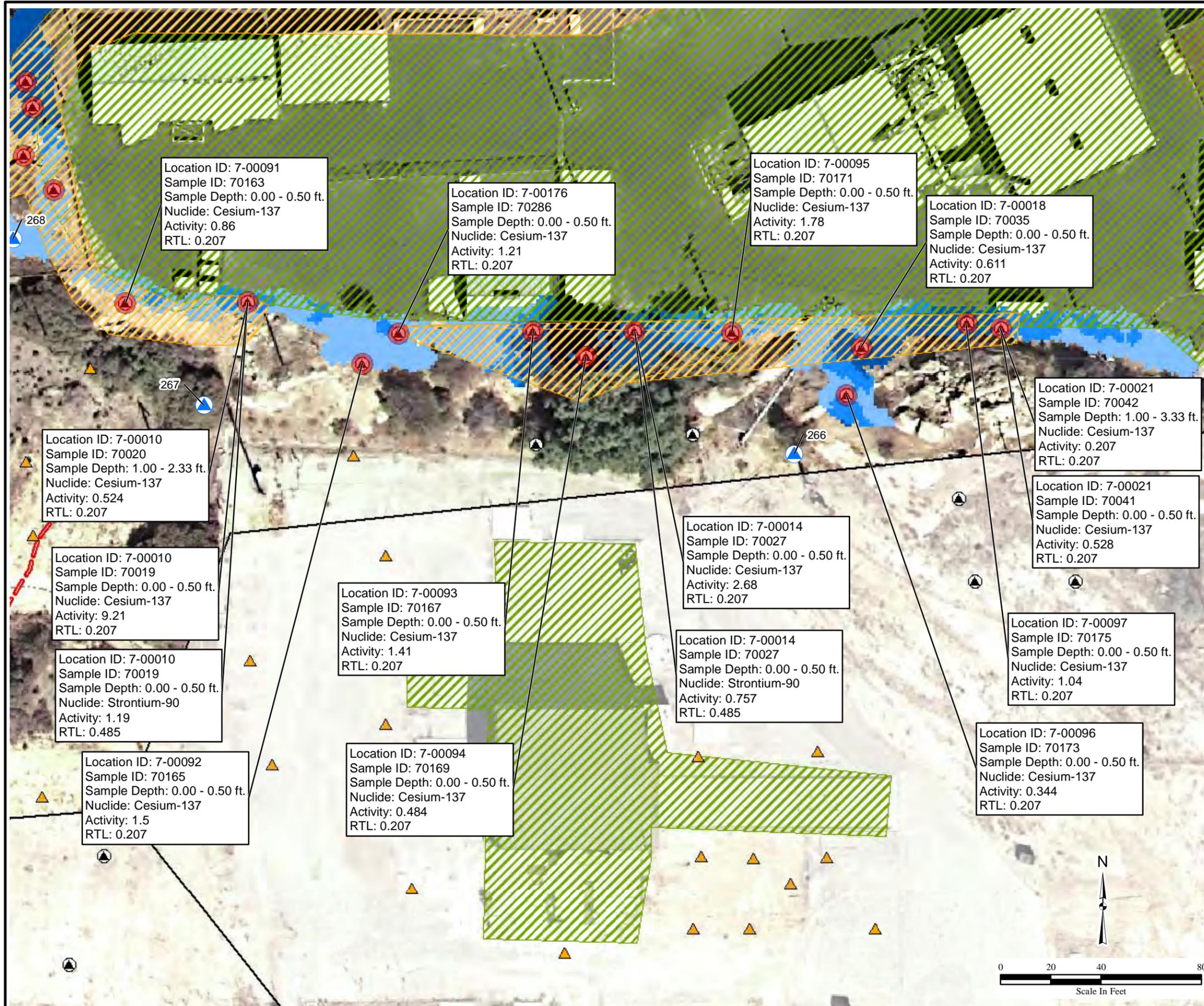


Figure 8
Outfall 3 Drainage - Map 1
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

- Exceed RTLs
- Round 2 Step-out Sample Location**
- ▲ Subsurface
- ▲ Subsurface Drainage
- + Surface
- ▲ Surface Subsurface
- Round 1 Sample Location**
- Drainage
- ▲ Subsurface
- ▲ Surface Subsurface
- Geophysical Anomalies**
- Magnetometer
- Terrain Conductivity
- ▨ Magnetometer
- ▨ Terrain Conductivity
- Subareas

145 Location ID



Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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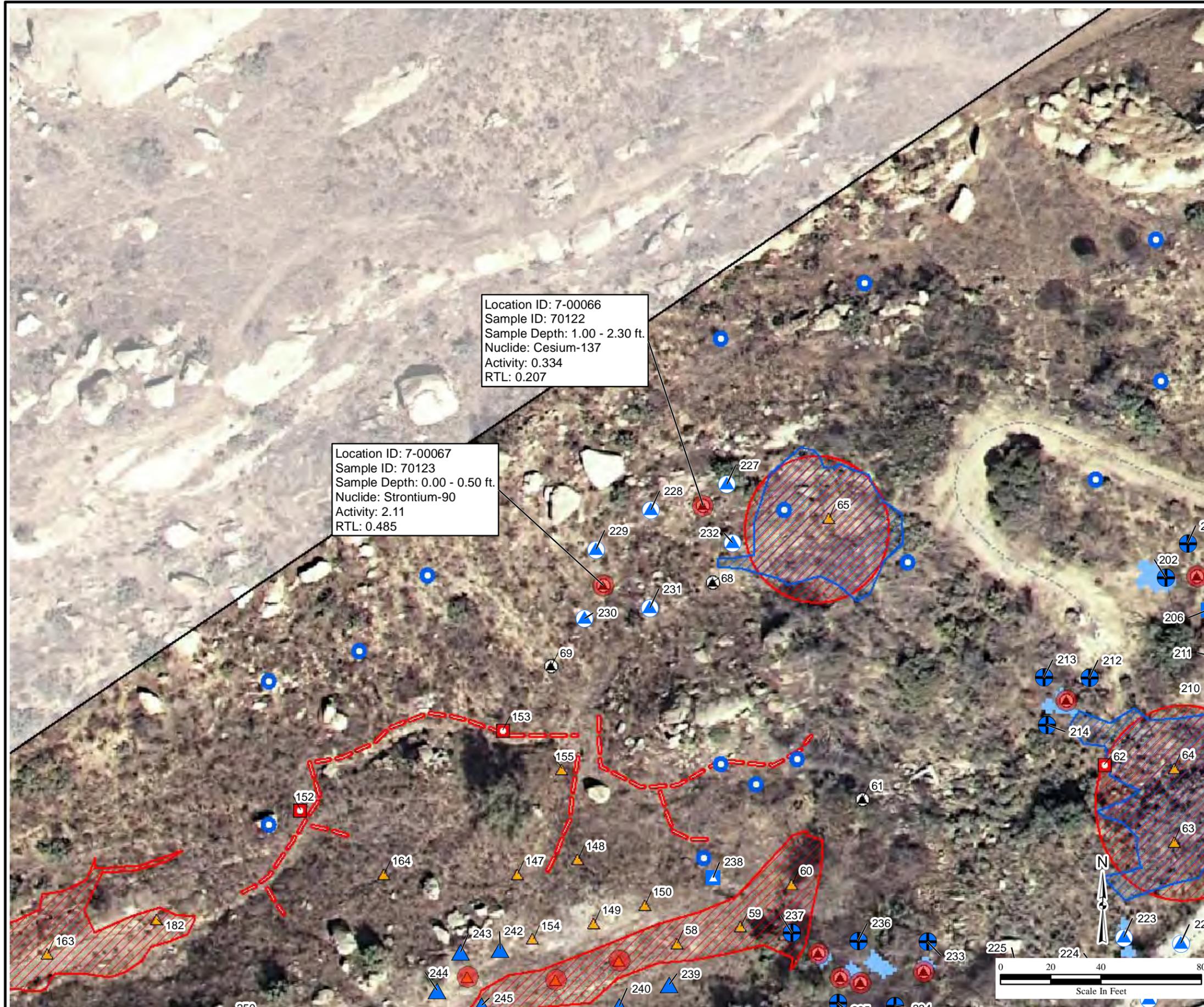


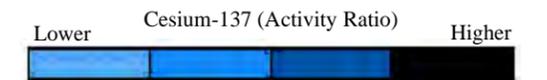
Figure 9
Outfall 3 Drainage - Map 2
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

- Exceed RTLs
- Round 2 Step-out Sample Location**
 - ▲ Subsurface
 - ▲ Subsurface Drainage
 - + Surface
 - ▲ Surface Subsurface
- Round 1 Sample Location**
 - Drainage
 - ▲ Subsurface
 - ▲ Surface Subsurface
- Geophysical Anomalies**
 - Magnetometer
 - Terrain Conductivity
 - ▨ Magnetometer
 - ▨ Terrain Conductivity
- Likely Remediation Zones**
 - ▨ Chemical
 - ▨ Decontamination and Decommissioning
 - Subareas
- 145 Location ID



Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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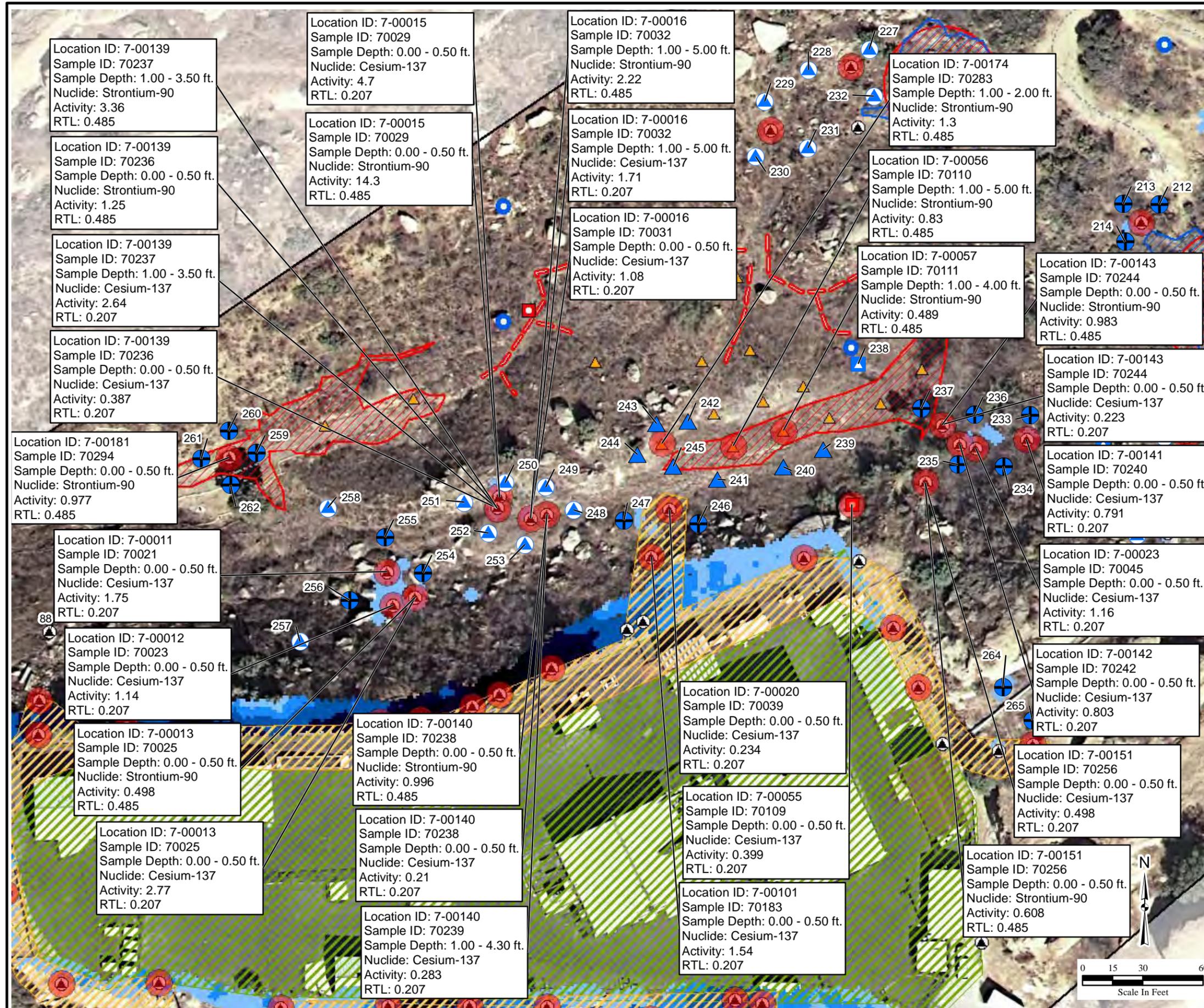


Figure 10
RMHF Holding Pond - Map 1
Subarea 7, Round 2
Santa Susana Field Laboratory

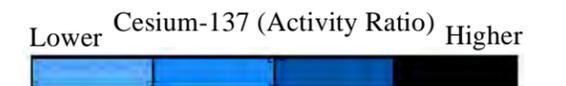
U.S. EPA Region 9



Legend

- Exceed RTLs
- Round 2 Step-out Sample Location**
- ▲ Subsurface
- ▲ Surface Subsurface
- Round 1 Sample Location**
- Drainage
- ▲ Subsurface
- ▲ Surface Subsurface
- Geophysical Anomalies**
- Magnetometer
- - - Terrain Conductivity
- ▨ Terrain Conductivity
- Likely Remediation Zones**
- ▨ Chemical
- ▨ Decontamination and Decommissioning
- Subareas

145 Location ID



Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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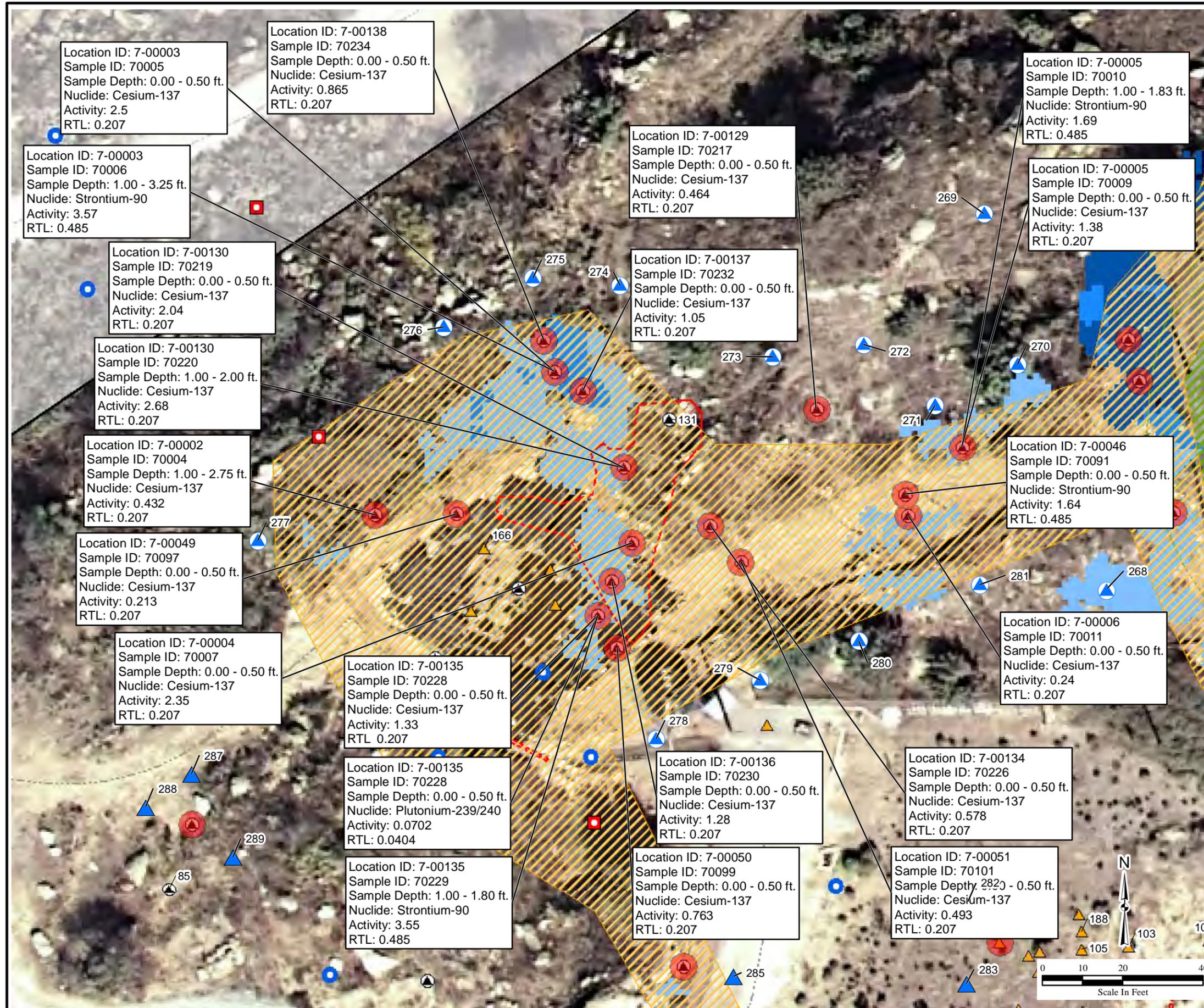


Figure 11
RMHF Holding Pond - Map 2
Subarea 7, Round 2
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

- Exceed RTLs
 - Round 2 Step-out Sample Location**
 - ▲ Subsurface
 - ▲ Subsurface Drainage
 - Surface
 - ▲ Surface Subsurface
 - Round 1 Sample Location**
 - Drainage
 - ▲ Subsurface
 - ▲ Surface Subsurface
 - Geophysical Anomalies**
 - Terrain Conductivity
 - Magnetometer
 - Terrain Conductivity
 - ▨ Terrain Conductivity
 - Likely Remediation Zones**
 - ▨ Chemical
 - ▨ Decontamination and Decommissioning
 - Subareas
 - 145 Location ID
- Lower Cesium-137 (Activity Ratio) Higher

Notes:
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

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 Fig11_RMHFHoldingPond-2.mxd
 5/10/2012 pbillock
 Source:HGL 2010, CIRGIS 2007

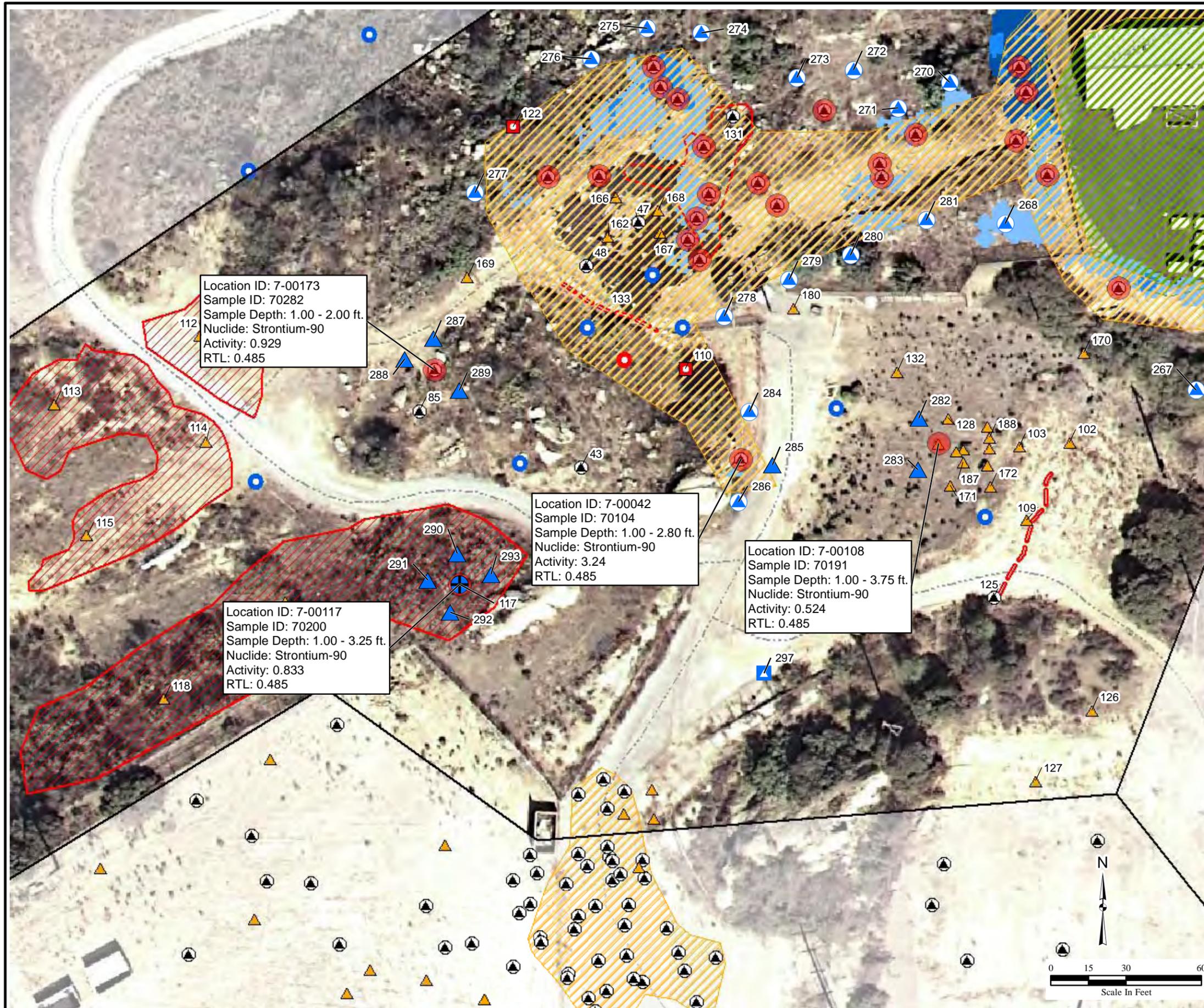


Figure 12
Southern Portion
Subarea 7, Round 2
Santa Susana Field Laboratory

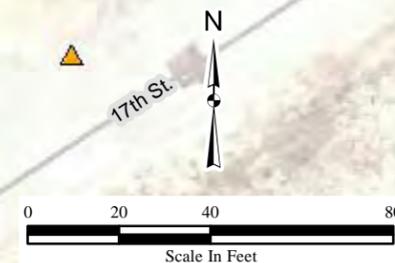
U.S. EPA Region 9



Legend

- Exceed RTLs
 - Round 2 Step-out Sample Location
 - ▲ Subsurface
 - Round 1 Sample Location
 - Drainage
 - ▲ Subsurface
 - ▲ Surface Subsurface
 - Geophysical Anomalies
 - Magnetometer
 - Terrain Conductivity
 - Likely Remediation Zones
 - Chemical
 - Decontamination and Decommissioning
 - Subareas
 - 145 Location ID
- Notes:**
 RTL - Radiological Trigger Level
 ft - Feet
 ID - Identification
 All units reported in picocuries per gram

Location ID: 7-00120
 Sample ID: 70205
 Sample Depth: 1.00 - 5.00 ft.
 Nuclide: Strontium-90
 Activity: 0.517
 RTL: 0.485



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 Fig12_SouthPortion.mxd
 5/10/2012 pbillock
 Source:HGL 2010, CIRGIS 2007



ATTACHMENT 3

Gamma Anomalies, Static Count
Geophysical Anomalies
Subarea HSA-7 (Aerial Photo Features)
Past Radiological Soil Investigations

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Legend

Subarea 7 Groups

Centerline Roads
 Primary Roads
 Secondary Roads
 Tertiary Roads

Buildings
 Demolished
 Existing

Magnetometer Anomaly Area

Geophysical Anomalies
 Terrain Conductivity
 Magnetometer
 Ground Penetrating Radar
 Cut and Fill Boundaries
 Magnetometer Anomaly Linear
 Terrain Conductivity Anomaly Linear
 Ground Penetrating Radar
 Interpreted Drain Remnant
 Buried Metals

Surface Water
 Intermittent Stream
 Permanent Stream
 Surface Water
 Lined Channel

Surface Water Flow
 Surface Water Flow
 (From Boeing Database, 2008)

Surface Features
 Channel
 Drain
 Drainage Divide
 Gutter
 Tank
 Vault
 Well

Utilities
 Gas
 Storm Drain
 Sanitary Sewer
 Water
 Water (Removed)
 Water (Removed)
 Pipes (Unknown Type)
 Pipes (Unknown Type)

0 25 50 100
 Scale In Feet



**Geophysical Anomalies
 Subarea 7
 Santa Susana Field Laboratory**

U.S. EPA Region 9



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 Subarea_7_Geophysical_20110722.mxd
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 Source:HGL 2010, CIRGIS 2007
 Coordinate System: NAD83 CA State Plane V





Legend

- Subarea 7
- Centerline Roads**
 - Primary Roads
 - Secondary Roads
 - Tertiary Roads
- Buildings**
 - Demolished
 - Existing
 - Parking Lots
- Surface Water**
 - Intermittent Stream
 - Stream
 - Surface Water
 - Lined Channel

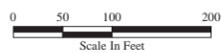
- Tanks**
 - Above ground Storage Tank
 - Underground Storage Tank
 - Unknown Tank Type
 - French Drain Holding Tank
 - Dry Well
 - Tank Footprint
 - Well
 - French Drain
- Process Knowledge Data**
 - Process Knowledge Features

- Aerial Photograph Data**
 - Aerial Photograph Features
- Utilities**
 - Gas
 - Storm Drain
 - Sanitary Sewer
 - Sanitary Waste
 - Water
 - Water (Removed)

- Surface Features**
 - Tank
 - Vault
 - Channel
 - Drain
 - Drainage Divide
 - Gutter
 - Pipes (Unknown Type)
 - Surface Water Flow
 - Likely Structural Remediation Zones
 - Likely Chemical Remediation Zones

Aerial Photograph Descriptors

- | Type | Description |
|------|-------------------------------|
| B | Building |
| CONT | Container |
| CR | Crates |
| DB | Debris |
| DG | Disturbed Ground |
| DTM | Dark Tone Material |
| EX | Excavation |
| FA | Fill Area |
| GS | Ground Scar |
| HT | Horizontal Tank |
| IM | Impoundment |
| LTMM | Light Toned Mounded Material |
| MTMM | Medium Toned Mounded Material |
| OS | Open Storage |
| PA | Processing Area |
| PL | Pipeline |
| POSS | Possible |
| PROB | Probable |
| SS | Smoke Stack |
| ST | Stain |
| S-T | Storage Tank |
| UO | Unidentified Object |
| VT | Vertical Tank |
| WDA | Waste Disposal Area |



Historical Site Assessment
Draft Technical Memorandum - HSA-7

Plate 1 Subarea HSA-7 Santa Susana Field Laboratory

U.S. EPA Region 9

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Samples with readings above Preliminary BTV's

- ✚ Samples with readings above Preliminary BTV's
- Subarea Boundary
- ScreenLayer
- Demolished
- Existing

**Past Radiological Soil Investigations
Subarea 7
Santa Susana Field Laboratory**

U.S. EPA Region 9



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Source:HGL 2010, CIRGIS 2007

