

Addendum No. 2 to

Master Work Plan/Field Sampling and Analysis
Plan, Co-Located Chemical Sampling at Area IV
Santa Susana Field Laboratory, Ventura County,
California

EPA Subarea 5A Soil Sampling

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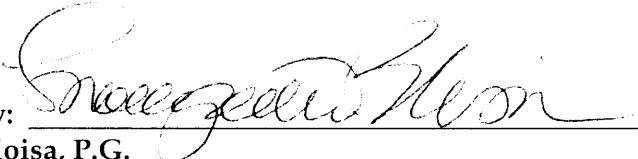
US Department of Energy
EM Consolidated Business Center
Contract DE-AM09-05SR22404
CDM Task Order DE-AT30-08CC60021/ET17

February 2011

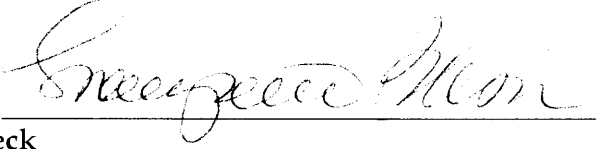

Addendum No. 2 to Master Work Plan/Field
Sampling and Analysis Plan, Co-Located Chemical
Sampling at Area IV Santa Susana Field Laboratory,
Ventura County, California

EPA Subarea 5A Soil Sampling

Contract DE-AM09-05SR22404
CDM Task Order DE-AT30-08CC60021/ET17

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2/22/2011
Date


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2/22/2011
Date

Introduction

This document supports the field implementation of the soil sampling program addressed in the *Master Work Plan (WP)/Field Sampling and Analysis Plan (FSAP), Co-Located Chemical Sampling at Area IV, Santa Susana Field Laboratory* (Master WP/FSAP, CDM 2011). The Master WP/FSAP dictates the field sampling, analytical, quality control, and data review procedures for the collection and chemical analysis of soil samples within Area IV of the Santa Susana Field Laboratory (SSFL) and the Northern Buffer Zone (NBZ), collectively termed the Area IV study area. As part of a radiological characterization study, the United States Environmental Protection Agency (EPA) is collecting surface and subsurface soil samples throughout Area IV of SSFL and the NBZ for the presence of radioactive elements (radionuclides). The California Department of Toxic Substances Control (DTSC) and Department of Energy (DOE) requested that soil collected by EPA also be analyzed for chemical analytes. DTSC and DOE agreed that the initial chemical sampling be done by DOE's contractor, CDM Federal Programs Corporation (CDM).

Purpose of Addendum

This addendum documents the rationale for the location and depth of surface and subsurface soil samples to be collected during the first phase of soil sampling within Subarea 5A. The specific locations of samples are provided in EPA's *Subarea 5A FSP Addendum, Santa Susana Field Laboratory Site, Area IV Radiological Study*, (HGL 2011). Soil sampling by EPA has been divided into two phases. The first phase is based on EPA's Historical Site Assessment (HSA) of Subarea 5A (that also included a gamma survey, geophysical survey, and review of prior data) with sample locations selected by EPA to address concerns identified in the HSA. A second phase of sampling, which is not covered by this Addendum, will involve further radionuclide characterization "step-out" samples. The need for chemical "step-out" samples will be determined on a case-by-case basis following a review of all chemical data collected for Area IV.

Under the co-located soil sampling program, EPA and its consultant HydroGeoLogic, Inc. (HGL) will physically collect the soil material. CDM personnel will be responsible for the sample container preparation, sample handling and documentation, sample shipment, laboratory procurement, chemical analyses of the samples, and chemical data review. Co-located soil samples collected by CDM will be analyzed for chemical analytes as stipulated in Table 4-1 (Data Quality Objectives) and Table 6-1 (Analytical Methods, Containers, Preservatives, and Holding Times) of the Master WP/FSAP (CDM 2011).

Figure 1 is a layout of EPA's Subarea 5A. The proposed sample locations are shown on Figures 2 through 9, which were taken from EPA's FSP Addendum for Subarea 5A

(HGL 2011). The basic descriptions and rationale for the soil sample locations for Subarea 5A are summarized in Table 1.

EPA's identified sample locations are based on radiological sampling needs determined by EPA, not chemical sampling needs for the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of Area IV. The sampling protocol for targeting the depths of soil samples for chemical analyses are illustrated in Figures 5-1 and 5-2 of the Master WP/FSAP.

Soil samples for chemical analyses will not be collected from all locations identified in Subarea 5A by EPA for radionuclide analyses. Portions of the Subarea 5A study area have been subject to prior investigations under the RFI. Some locations have adequate data for use in determining the need for a soil cleanup action. Locations with adequate data were discussed with DTSC personnel on February 3, 2011. HGL's sample locations that were jointly de-selected by DOE and DTSC for chemical sample collection were done so using the following three "Sample/No Sample" decision criteria. The criterion for each selected location is also noted in Table 1.

SCENARIO 1. CLEARLY CONTAMINATED AREAS THAT WILL REQUIRE CLEANUP

a. Clearly contaminated areas are those where a high frequency of occurrence and/or number of chemical analyte concentrations detected in RFI samples obviously exceed current background and/or method reporting limits. The magnitude of exceedance to be considered may vary on a case by case basis (e.g., two to ten times exceedance of background or method reporting limits will be considered on a case by case basis).

b. DOE agrees to cleanup of the area in question.

A potential discretionary decision will be made to not collect chemical samples at some EPA locations where sufficient chemical data already exist, however co-located sampling will still be conducted near such as area, as needed, to adequately define the extent of contamination.

SCENARIO 2. HIGH DENSITY RADIOLOGICAL SAMPLING IN AREAS WITH ELEVATED GAMMA SURVEY RESULTS

a. There are no known and/or identified chemical operational areas and/or releases (subject to field observations).

b. There is a non-point source, no preferential pathways have been identified, and the locations are in an open/flat area.

c. The area is sufficiently distant from known potential chemical sources.

A potential discretionary decision may be made to not collect chemical samples at some EPA locations so that sample spacing is consistent with the RFI approach of approximately 50 to 100 feet for spacing. Terrain and structures will be taken into consideration.

SCENARIO 3. HIGH DENSITY RADIOLOGIC SAMPLING OF HISTORIC FEATURES

- a. The feature has known chemical and/or radiologic impacts and/or identified data gaps.
- b. Targeted sampling density should be based on feature characteristics and historical use (e.g., hold up tanks, septic tanks, sumps, test areas, etc.).

A potential discretionary decision, using professional judgment, may be made to not collect chemical samples at some EPA locations so that sample spacing is consistent with the RFI approach.

Additional scenarios will be evaluated using existing RFI data and recent co-located sampling results:

- Discretionary depth selection for certain analytes (e.g., dioxins) based on known distribution
- Discretionary reduction of analyte list based on known historical chemical usage and chemical breakdown rate

The logic for discretionary selection of co-located sample locations for Subarea 5A has been discussed with DTSC. The rationale for the overall discretionary co-located sampling has also been discussed with the community during meetings on February 2 and February 10, 2010.

Schedule

EPA will initiate soil sampling within Subarea 5A in mid-February 2011 with the collection of surface soil samples identified in Table 1. Collection of subsurface samples will also be initiated in mid-February 2011 following completion of soil boring sampling within Subarea 5B.

References

CDM Federal Programs Corporation (CDM). 2011. *Master Work Plan/Field Sampling and Analysis Plan Co-Located Chemical Sampling at Area IV, Santa Susana Field Laboratory, Ventura County, California*. February.

HydroGeoLogic, Inc. 2011. *Subarea 5A FSP Addendum, Santa Susana Field Laboratory Site, Area IV Radiological Study, Santa Susana Field Laboratory*. February.

FIGURES


Figure 1
Subarea 5A Base Map
Santa Susana Field Laboratory


U.S. EPA Region 9




Legend


Buildings:

 Demolished


 Existing


Buildings:

 Demolished


 Existing


Buildings:


 Demolished

 Existing


Buildings:


 Demolished


 Existing

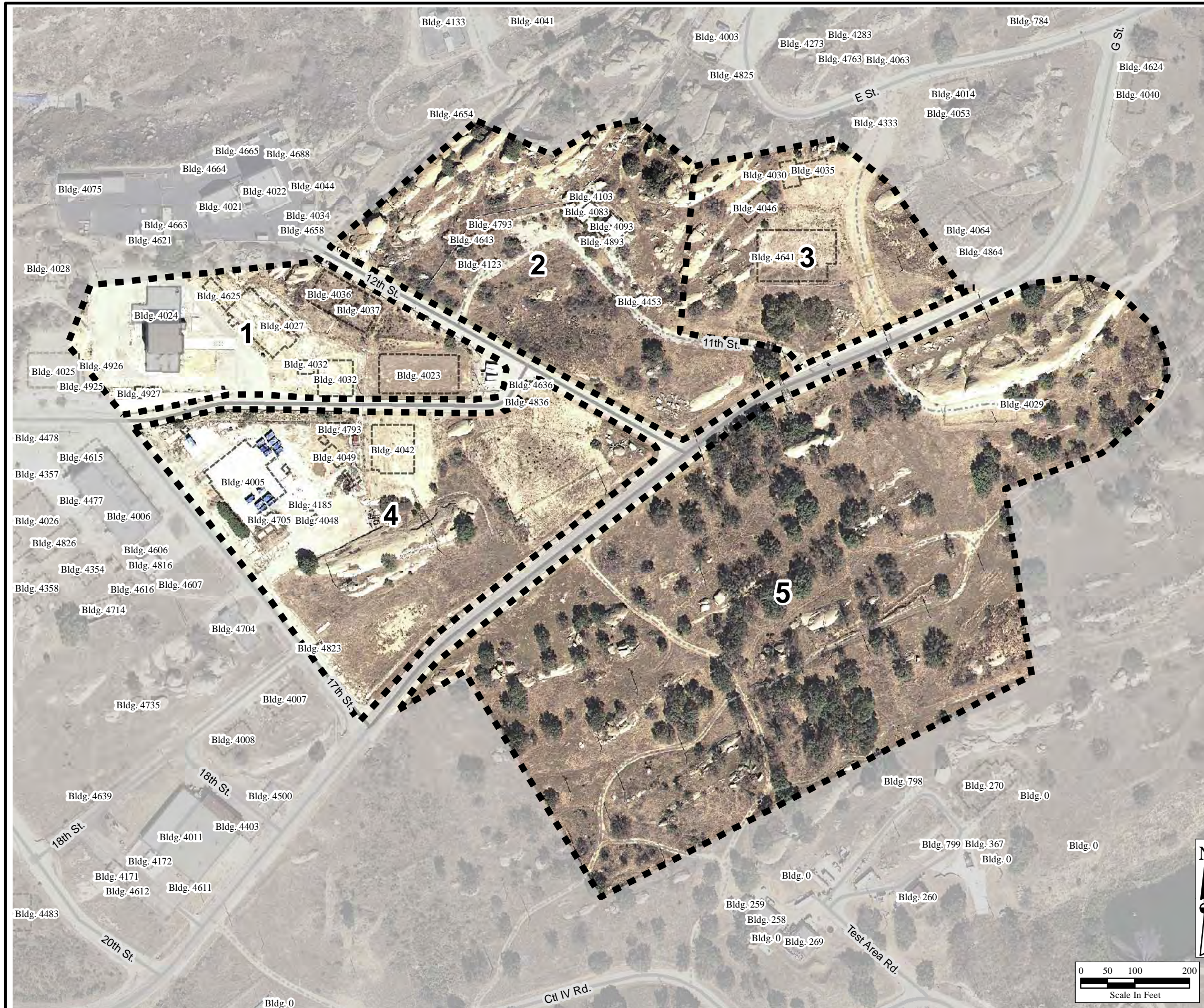
 Subarea 5A Groups

Buildings:

 Demolished

 Existing

 Subarea 5A Groups



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(1)Subarea5A_BaseMap_11x17.mxd
2/10/2011 pbllock
Source:HGL 2010, CIRGIS 2007

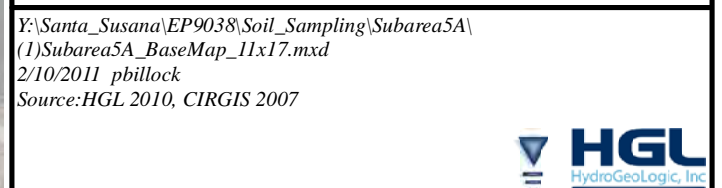


Figure 2
Subarea 5A Group 1 Sample Locations
Santa Susana Field Laboratory

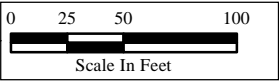


Legend

- Buildings:
- Demolished
 - Existing
- 1 - 5 Subarea 5A Groups
- Drainage Sample
 - Subsurface Sample
 - Surface and Subsurface Sample
- (Grayed Symbols Represent Soil Samples from Previous Subareas)
- Likely Remediation Zones

Changes Due to Likely Remediation Zones
(See Table 1 for details)

- Changed Type
- Omitted



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(2)Group1ProposedSampleLocations_11x17_5A.mxd
2/16/2011 pbllock
Source:HGL 2010, CIRGIS 2007



Figure 3
Subarea 5A Group 2 Sample Locations
Santa Susana Field Laboratory

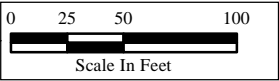


Legend

- Buildings:
- Demolished
 - Existing
- 1 - 5** Subarea 5A Groups
- Drainage Sample
 - Subsurface Sample
 - Surface and Subsurface Sample
- (Grayed Symbols Represent Soil Samples from Previous Subareas)
- Likely Remediation Zones

Changes Due to Likely Remediation Zones
(See Table 1 for details)

- Changed Type
- Omitted



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2/16/2011 pbblock
Source:HGL 2010, CIRGIS 2007



Figure 4
Subarea 5A Group 3 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

Buildings:

Demolished

Existing

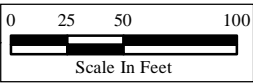
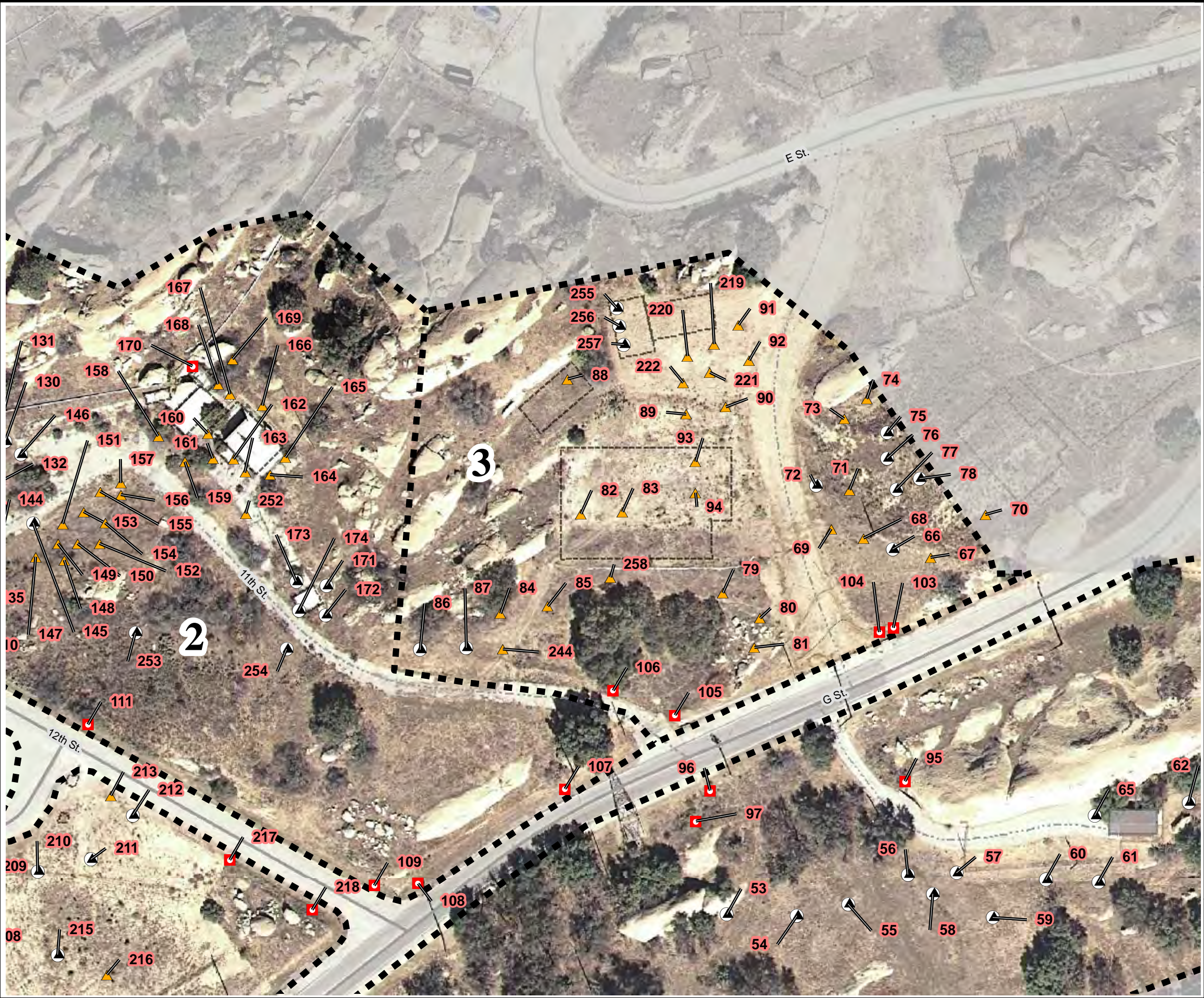
1 - 5 Subarea 5A Groups

Drainage Sample

Subsurface Sample

Surface and Subsurface Sample

(Grayed Symbols Represent Soil Samples from Previous Subareas)



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(4)Group3ProposedSampleLocations_11x17_5A.mxd
2/10/2011 sdrillos-kopecky
Source:HGL 2010, CIRGIS 2007

Figure 5
Subarea 5A Group 4 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

Buildings:

- Demolished
- Existing

Subarea 5A Groups

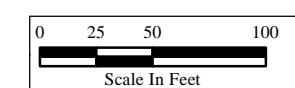
- Drainage Sample
- Subsurface Sample
- Surface and Subsurface Sample

(Grayed Symbols Represent Soil Samples from Previous Subareas)

Likely Remediation Zones

Changes Due to Likely Remediation Zones
(See Table 1 for details)

- Changed Type
- Omitted



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2/16/2011 pbillock
Source:HGL 2010, CIRGIS 2007

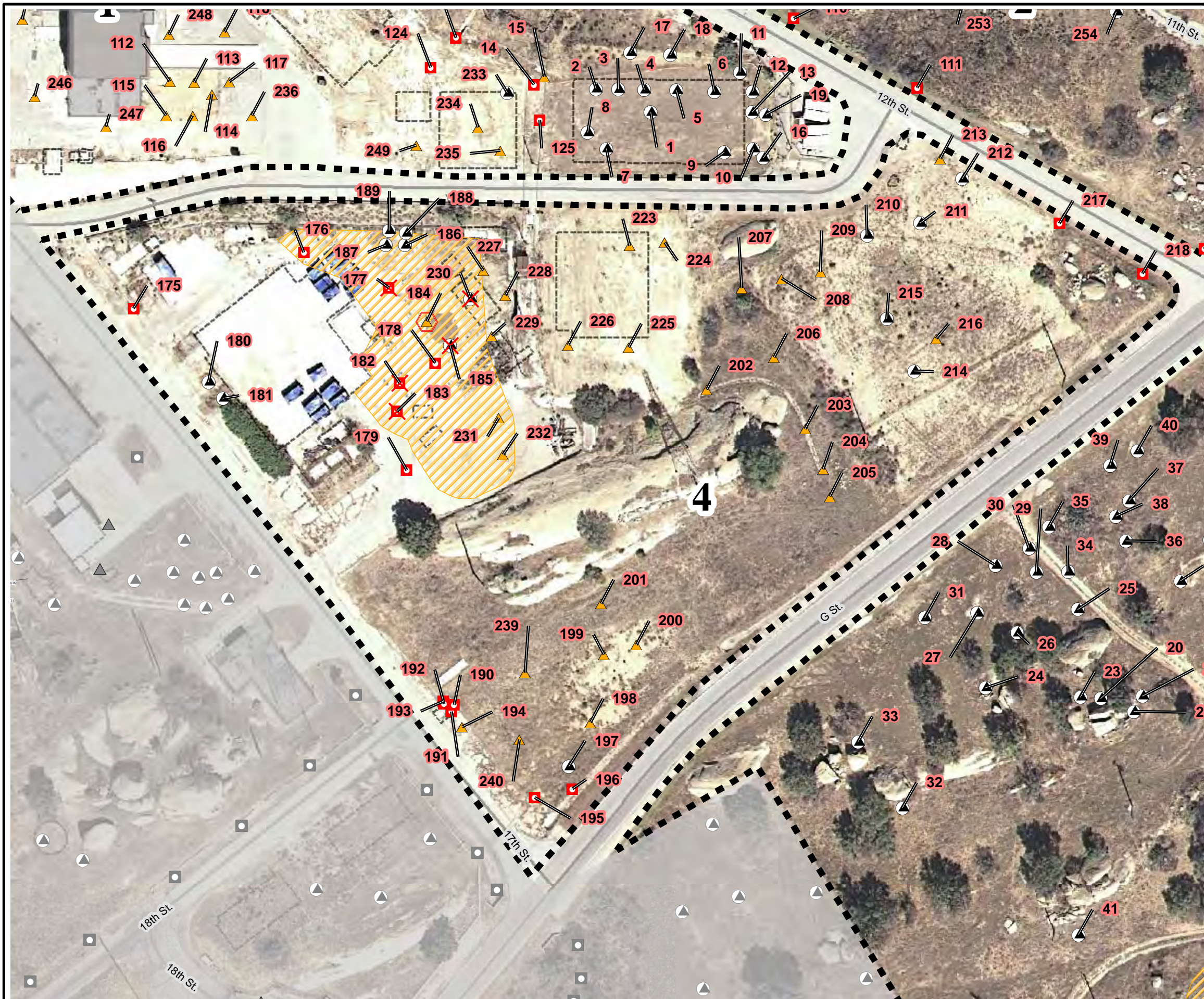


Figure 6
Subarea 5A Group 5 Sample Locations
Santa Susana Field Laboratory

U.S. EPA Region 9



Legend

Buildings:

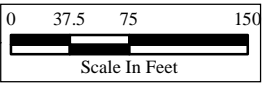
- Demolished
- Existing

Subarea 5A Groups

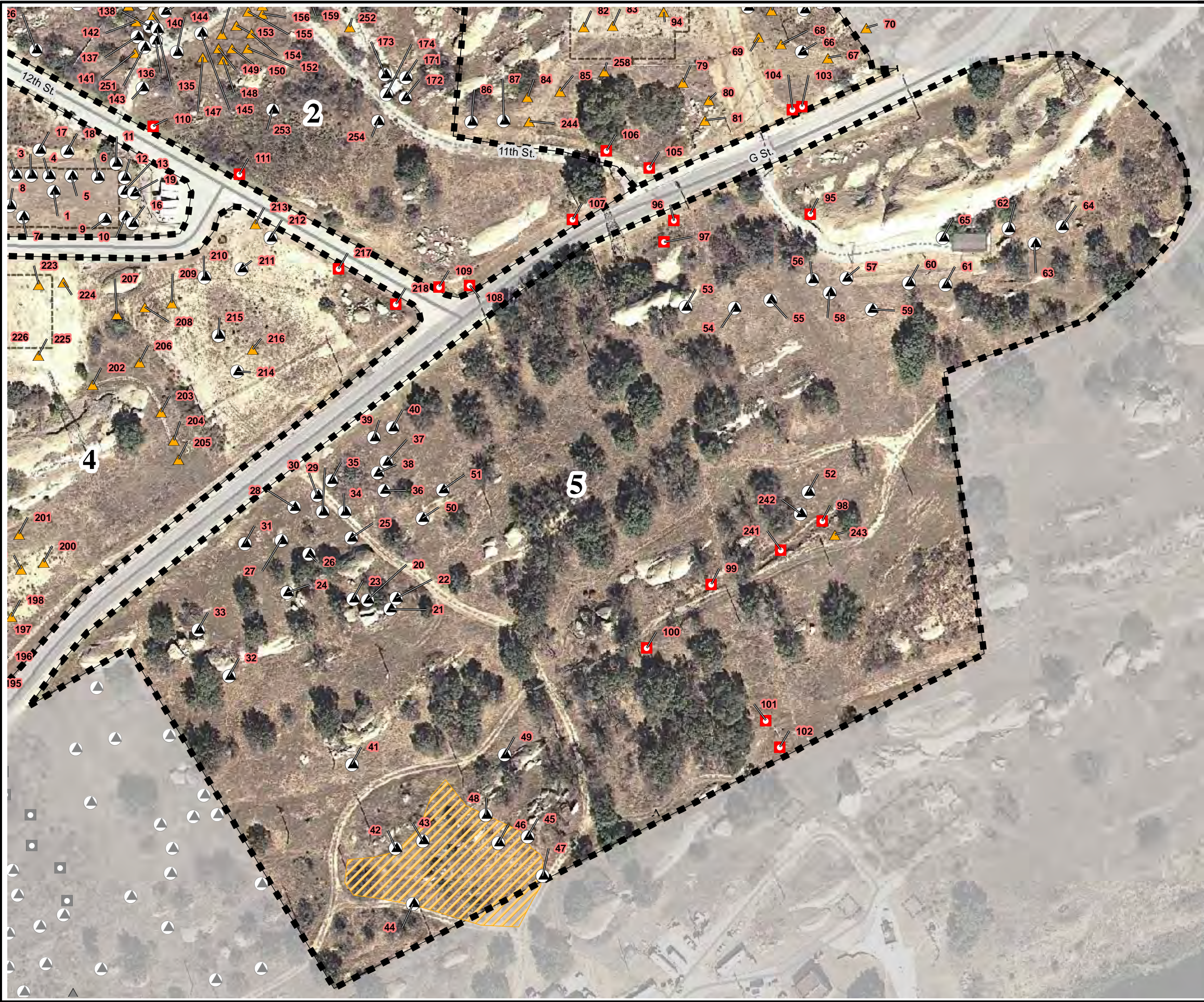
- Drainage Sample
- Subsurface Sample
- Surface and Subsurface Sample

(Grayed Symbols Represent Soil
Samples from Previous Subareas)

Likely Remediation Zones



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2/16/2011 pbillock
Source:HGL 2010, CIRGIS 2007



TABLE

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 1	Surface	1	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the sodium loop (Dwg 303-023-A7)	
Group 1	Subsurface	1	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the sodium loop (Dwg 303-023-A7)	
Group 1	Surface	2	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	
Group 1	Subsurface	2	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	
Group 1	Surface	3	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	High density radiologic sampling of feature (Hazardous Materials Storage Area)
Group 1	Subsurface	3	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	High density radiologic sampling of feature (Hazardous Materials Storage Area)
Group 1	Surface	4	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the sodium loop (Dwg 303-023-A7)	
Group 1	Subsurface	4	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	
Group 1	Surface	5	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the sodium loop (Dwg 303-023-A7)	High density radiologic sampling of feature (Hazardous Materials Storage Area)
Group 1	Subsurface	5	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	High density radiologic sampling of feature (Hazardous Materials Storage Area)
Group 1	Surface	6	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the sodium loop (Dwg 303-023-A7)	
Group 1	Subsurface	6	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	This building was used for sodium component testing and later, for research of radioactivity migration in sodium loops and radioactivity separation technology. This is the approx. location of the pump test loop (Dwg 303-023-A7)	
Group 1	Surface	7	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	Location of the service sink (Dwg 303-023-A7)	
Group 1	Subsurface	7	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	Location of the service sink (Dwg 303-023-A7)	
Group 1	Surface	8	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	location of the pump test loop (Dwg 303-023-A7)	
Group 1	Subsurface	8	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	location of the pump test loop (Dwg 303-023-A7)	
Group 1	Surface	9	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	Scan results indicate presence of elevated gamma radiation	
Group 1	Subsurface	9	Inside footprint of Bldg 4023 (Liquid Metal Component Test Building)	Scan results indicate presence of elevated gamma radiation	
Group 1	Surface	10	Immediately east of Bldg 4023 footprint	Scan results indicate presence of elevated gamma radiation	
Group 1	Subsurface	10	Immediately east of Bldg 4023 footprint	Scan results indicate presence of elevated gamma radiation	
Group 1	Surface	11	Northeast corner of Bldg 4023 footprint	Location of radioactive liquid waste hold tank (removed)	High density radiologic sampling of feature (Hazardous Materials Storage Area)
Group 1	Subsurface	11	Northeast corner of Bldg 4023 footprint	Dwg 303-023-P4 shows the bottom of the tank vault to be at 7 feet bgs and so the collection interval will be 5-10 feet bgs.	High density radiologic sampling of feature (Hazardous Materials Storage Area)
Group 1	Surface	12	Northeast corner of Bldg 4023 footprint	Location of radioactive liquid waste hold tank. Believed to be removed BUT, GPR shows a buried metal measurement.	
Group 1	Subsurface	12	Northeast corner of Bldg 4023 footprint	Dwg 303-023-P4 shows the bottom of the tank vault to be at 7 feet bgs and so the collection interval will be 5-10 feet bgs.	
Group 1	Surface	13	Immediately east of Bldg 4023 footprint	Location of radioactive liquid waste hold tank. Believed to be removed BUT, GPR shows a buried metal measurement.	
Group 1	Subsurface	13	Immediately east of Bldg 4023 footprint	Dwg 303-023-P4 shows the bottom of the tank vault to be at 7 feet bgs and so the collection interval will be 5-10 feet bgs.	
Group 1	Drainage	14	Northwest corner of Bldg 4023 footprint	Location of catch basin identified in Dwg 303-023-P1 (sample sediment inside)	
Group 1	Subsurface	15	Northwest corner of Bldg 4023 footprint	Location of catch basin identified in Dwg 303-023-P1	
Group 1	Surface	16	Southeast corner of Bldg 4023 footprint	Location of catch basin identified in Dwg 303-023-C1	
Group 1	Subsurface	16	Southeast corner of Bldg 4023 footprint	Location of catch basin identified in Dwg 303-023-C1	
Group 1	Surface	17	Approx 30 feet north of Bldg 4023 footprint	Location of "AC Trench" identified in Dwg 303-023-C1. Surface sample to be collected just beneath asphalt.	
Group 1	Subsurface	17	Approx 30 feet north of Bldg 4023 footprint	Location of "AC Trench" identified in Dwg 303-023-C1	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 1	Surface	18	Approx 30 feet north of Bldg 4023 footprint	Location of "AC Trench" identified in Dwg 303-023-C1. Surface sample to be collected just beneath asphalt.	
Group 1	Subsurface	18	Approx 30 feet north of Bldg 4023 footprint	Location of "AC Trench" identified in Dwg 303-023-C1	
Group 1	Surface	19	Approx 30 feet east of Bldg 4023 footprint	Location of "AC Trench" identified in Dwg 303-023-C1. Surface sample to be collected just beneath asphalt.	
Group 1	Subsurface	19	Approx 30 feet east of Bldg 4023 footprint	Location of "AC Trench" identified in Dwg 303-023-C1	
Group 5	Surface	20	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	High density radiologic sampling of area due to elevated gamma survey results
Group 5	Subsurface	20	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	High density radiologic sampling of area due to elevated gamma survey results
Group 5	Surface	21	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	21	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	22	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	22	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	23	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	High density radiologic sampling of area due to elevated gamma survey results
Group 5	Subsurface	23	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	High density radiologic sampling of area due to elevated gamma survey results
Group 5	Surface	24	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	24	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	25	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (magnetometer)	
Group 5	Subsurface	25	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (magnetometer)	
Group 5	Surface	26	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (magnetometer)	
Group 5	Subsurface	26	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (magnetometer)	
Group 5	Surface	27	Western portion of group 5	Location of aerial photography feature WDA-8	High density radiologic sampling of feature (WDA-8)
Group 5	Subsurface	27	Western portion of group 5	Location of aerial photography feature WDA-8	High density radiologic sampling of feature (WDA-8)
Group 5	Surface	28	Western portion of group 5	Location of aerial photography feature WDA-8	
Group 5	Subsurface	28	Western portion of group 5	Location of aerial photography feature WDA-8	
Group 5	Surface	29	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter)	
Group 5	Subsurface	29	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter)	
Group 5	Surface	30	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer))	High density radiologic sampling of feature (WDA-8)
Group 5	Subsurface	30	Western portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer))	High density radiologic sampling of feature (WDA-8)
Group 5	Surface	31	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	31	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	32	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	33	Western portion of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	34	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter)	High density radiologic sampling of feature (WDA-8)
Group 5	Subsurface	34	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter)	High density radiologic sampling of feature (WDA-8)
Group 5	Surface	35	Western upper portion of group 5	Location of aerial photography feature WDA-8	
Group 5	Subsurface	35	Western upper portion of group 5	Location of aerial photography feature WDA-8	
Group 5	Surface	36	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer)	
Group 5	Subsurface	36	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer)	
Group 5	Surface	37	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer)	
Group 5	Subsurface	37	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer)	
Group 5	Surface	38	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer)	High density radiologic sampling of feature (WDA-8)
Group 5	Subsurface	38	Western upper portion of group 5	Location of aerial photography feature WDA-8 and potential geophysical anomaly (terrain conductivity meter and magnetometer)	High density radiologic sampling of feature (WDA-8)
Group 5	Surface	39	Western upper portion of group 5	Location of aerial photography feature WDA-8	High density radiologic sampling of feature (WDA-8)
Group 5	Subsurface	39	Western upper portion of group 5	Location of aerial photography feature WDA-8	High density radiologic sampling of feature (WDA-8)
Group 5	Surface	40	Western upper portion of group 5	Location of aerial photography feature WDA-8	
Group 5	Subsurface	40	Western upper portion of group 5	Location of aerial photography feature WDA-8	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 5	Surface	41	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	41	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	42	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	42	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	43	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	Clearly contaminated area (Compound A hummocky area south of G Street)
Group 5	Subsurface	43	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	Clearly contaminated area (Compound A hummocky area south of G Street)
Group 5	Surface	44	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	44	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	45	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	45	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	46	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	Clearly contaminated area (Compound A hummocky area south of G Street)
Group 5	Subsurface	46	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	Clearly contaminated area (Compound A hummocky area south of G Street)
Group 5	Surface	47	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	47	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	48	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	48	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	49	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	49	Southwest corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	50	Western upper portion of group 5	Location of aerial photography feature EX (excavation)	
Group 5	Subsurface	50	Western upper portion of group 5	Location of aerial photography feature EX (excavation)	
Group 5	Surface	51	Western upper portion of group 5	Location of aerial photography feature POSS DG	
Group 5	Subsurface	51	Western upper portion of group 5	Location of aerial photography feature POSS DG	
Group 5	Surface	52	Southeast corner of group 5	Location of storage area known as "South East Drum Storage Yard"	
Group 5	Subsurface	52	Southeast corner of group 5	Location of storage area known as "South East Drum Storage Yard"	
Group 5	Surface	53	Southeast corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	53	Southeast corner of group 5	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	54	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of potential geophysical anomaly (terrain conductivity meter)	
Group 5	Subsurface	54	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of potential geophysical anomaly (terrain conductivity meter)	
Group 5	Surface	55	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of potential geophysical anomaly (terrain conductivity meter)	
Group 5	Subsurface	55	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of potential geophysical anomaly (terrain conductivity meter)	
Group 5	Surface	56	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Subsurface	56	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Surface	57	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Subsurface	57	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Surface	58	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Subsurface	58	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Surface	59	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Subsurface	59	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Surface	60	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Subsurface	60	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Surface	61	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Subsurface	61	Northeast corner of group 5 and west of Radiation Measurement Fac. (bldg 4029)	Location of aerial photo feature GS.	
Group 5	Surface	62	Northeast corner of group 5 and immediately east of Bldg 4029	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	62	Northeast corner of group 5 and immediately east of Bldg 4029	Scan results indicate presence of elevated gamma radiation	
Group 5	Surface	63	Northeast corner of group 5 and immediately east of Bldg 4029	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	63	Northeast corner of group 5 and immediately east of Bldg 4029	Scan results indicate presence of elevated gamma radiation	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 5	Surface	64	Northeast corner of group 5 and immediately east of Bldg 4029	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	64	Northeast corner of group 5 and immediately east of Bldg 4029	Scan results indicate presence of elevated gamma radiation	
Group 5	Subsurface	65	Northeast corner of group 5 and immediately west of Bldg 4029	Location of aerial photo feature CONT	
Group 3	Surface	66	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using terrain conductivity meter	
Group 3	Subsurface	66	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using terrain conductivity meter	
Group 3	Subsurface	67	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Subsurface	68	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using terrain conductivity meter	
Group 3	Subsurface	69	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Subsurface	70	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using terrain conductivity meter	
Group 3	Subsurface	71	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Surface	72	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Subsurface	72	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Subsurface	73	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Subsurface	74	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly using magnetometer.	
Group 3	Subsurface	75	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Subsurface	75	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Surface	76	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Subsurface	76	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Surface	77	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with conductivity meter) and gamma anomaly	
Group 3	Subsurface	77	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with conductivity meter) and gamma anomaly	
Group 3	Surface	78	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with conductivity meter) and gamma anomaly	
Group 3	Subsurface	78	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with conductivity meter) and gamma anomaly	
Group 3	Subsurface	79	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Subsurface	80	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Subsurface	81	Far east portion of Group 3 and north of G Street	Survey results indicate potential geophysical anomaly (with magnetometer) and gamma anomaly	
Group 3	Subsurface	82	Central part of Group 3 inside Shipping and Receiving Bldg footprint	Survey results indicate potential geophysical anomaly (with magnetometer).	
Group 3	Subsurface	83	Central part of Group 3 inside Shipping and Receiving Bldg footprint	Survey results indicate potential geophysical anomaly (with magnetometer).	
Group 3	Subsurface	84	Southwest corner of Group 3 and north of 11th Street	Location of aerial photo feature DG (Disturbed Ground)	
Group 3	Subsurface	85	Southwest corner of Group 3 and north of 11th Street	Location of aerial photo feature DG (Disturbed Ground)	
Group 3	Surface	86	Southwest corner of Group 3 and north of 11th Street	Scan results indicate presence of elevated gamma radiation	High density radiologic sampling of Building 30 area due to elevated gamma survey results
Group 3	Subsurface	86	Southwest corner of Group 3 and north of 11th Street	Scan results indicate presence of elevated gamma radiation	High density radiologic sampling of Building 30 area due to elevated gamma survey results
Group 3	Surface	87	Southwest corner of Group 3 and north of 11th Street	Scan results indicate presence of elevated gamma radiation	
Group 3	Subsurface	87	Southwest corner of Group 3 and north of 11th Street	Scan results indicate presence of elevated gamma radiation	
Group 3	Subsurface	88	Northern portion of Group 3 and inside building 4046 footprint	Location of aerial photo feature OS-24	
Group 3	Subsurface	89	North of Shipping and Receiving (bldg 4641) footprint	Location of aerial photo feature PROB OS (Probable Open Storage)	
Group 3	Subsurface	90	Northern portion of Group 3 and inside building 4046 footprint	Location of aerial photo feature PROB OS (Probable Open Storage) and potential location of leach field drain line	
Group 3	Subsurface	91	Northern portion of Group 3 and south of building 4046 footprint	Potential location of leach field drain line. Target sample collection interval is 5 - 10 feet bgs.	
Group 3	Subsurface	92	Northern portion of Group 3 and south of building 4046 footprint	Potential location of leach field drain line. Target sample collection interval is 5 - 10 feet bgs.	
Group 3	Subsurface	93	Northern portion of Group 3 and inside building 4641 footprint	Potential location of leach field drain line. Target sample collection interval is 5 - 10 feet bgs.	
Group 3	Subsurface	94	Northern portion of Group 3 and inside building 4641 footprint	Potential location of leach field drain line. Target sample collection interval is 5 - 10 feet bgs.	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 5	Drainage	95	Eastern side of group 5 along drainage that follows road to bldg 4029	Storm runoff from subareas 5A and 6 flows thru this drainage onto group 5 of subarea 5A	
Group 5	Drainage	96	South of G Street in northeast corner of group 5	Storm runoff from subareas 5A and 6 flows thru this drainage onto group 5 of subarea 5A	
Group 5	Drainage	97	South of G Street in northeast corner of group 5	Storm runoff from subareas 5A and 6 flows thru this drainage onto group 5 of subarea 5A	
Group 5	Drainage	98	South central area of group 5	Storm runoff from subareas 5A and 6 flow thru this drainage further into southern part of group 5	
Group 5	Drainage	99	South central area of group 5	Storm runoff from subareas 5A and 6 flow thru this drainage further into southern part of group 5	
Group 5	Drainage	100	South central area of group 5	Storm runoff from subareas 5A and 6 flow thru this drainage further into southern part of group 5	
Group 5	Drainage	101	South boundary area of group 5 just south of existing barbed wire fence	Storm runoff from subareas 5A and 6 flow thru this drainage further into southern part of group 5	
Group 5	Drainage	102	South boundary area of group 5 just south of existing barbed wire fence	Storm runoff from subareas 5A and 6 flow thru this drainage further into southern part of group 5	
Group 3	Drainage	103	North of G Street in southeast corner of group 3	Storm runoff from subareas 5A and 6 flows thru this drainage and onto group 5 via this culvert	
Group 3	Drainage	104	North of G Street in southeast corner of group 3	Storm runoff from subareas 5A and 6 flows thru this drainage and onto group 5 via this culvert	
Group 3	Drainage	105	North of G Street in southern portion of group 3	Storm runoff from subareas 5A and 6 flows thru this drainage and onto group 5 via this culvert	
Group 3	Drainage	106	North of G Street in southern portion of group 3	Storm runoff from subareas 5A and 6 flows thru this drainage and onto group 5 via this culvert	
Group 2	Drainage	107	North of G Street in southern portion of group 2	Storm runoff from subarea 5A flows thru this drainage and onto the 17th Street drainage in subarea 5B	
Group 2	Drainage	108	North of G Street in southern portion of group 2	Storm runoff from subarea 5A flows thru this drainage and onto the 17th Street drainage in subarea 5B	
Group 2	Drainage	109	North of G Street in southern portion of group 2	Storm runoff from subarea 5A flows thru this drainage and onto the 17th Street drainage in subarea 5B	
Group 2	Drainage	110	Along 12th Street in west portion of group 2	Storm runoff from subarea 5A flows thru this drainage and onto the 17th Street drainage in subarea 5B	
Group 2	Drainage	111	Along 12th Street in west portion of group 2	Storm runoff from subarea 5A flows thru this drainage and onto the 17th Street drainage in subarea 5B	
Group 1	Subsurface	112	Area near southeast corner of Bldg 4024	Location of three radioactive gas hold-up tanks identified in Dwg 303-024-C2	
Group 1	Subsurface	113	Area near southeast corner of Bldg 4024	Location of three radioactive gas hold-up tanks identified in Dwg 303-024-C2	
Group 1	Subsurface	114	Area near southeast corner of Bldg 4024	Location of two radioactive liquid waste hold-up tanks identified in Dwg 303-024-C2	
Group 1	Subsurface	115	Area near southeast corner of Bldg 4024	Location of three radioactive gas hold-up tanks identified in Dwg 303-024-C2	
Group 1	Subsurface	116	Area near southeast corner of Bldg 4024	Location of three radioactive gas hold-up tanks identified in Dwg 303-024-C2	
Group 1	Subsurface	117	Area east of Bldg 4024 along gantry crane rails	Location of eight radioactive waste storage tanks identified in Dwg 303-024-C2	
Group 1	Subsurface	118	Area east of Bldg 4024 along gantry crane rails	Location of eight radioactive waste storage tanks identified in Dwg 303-024-C2	
Group 1	Surface	119	Area north of bldg 4024	Location of discharge point from 6-inch storm-runoff line that originates in RMHF	
Group 1	Subsurface	119	Area north of bldg 4024	Location of discharge point from 6-inch storm-runoff line that originates in RMHF	
Group 1	Surface	120	Area north of bldg 4024	Location of "AC Trench" that receives discharge from 6-inch runoff line from RMHF. Surface sample to be collected just beneath asphalt.	
Group 1	Subsurface	120	Area north of bldg 4024	Location of "AC Trench" that receives discharge from 6-inch storm-run line from RMHF	
Group 1	Surface	121	Inside footprint of Bldg 4027	Scan results indicate presence of elevated gamma radiation	
Group 1	Subsurface	121	Inside footprint of Bldg 4027	Scan results indicate presence of elevated gamma radiation	
Group 1	Surface	122	Inside footprint of Bldg 4027	Scan results indicate presence of both a potential gamma (PGRAY 2) and geophysical anomaly	
Group 1	Subsurface	122	Inside footprint of Bldg 4027	Scan results indicate presence of both a potential gamma (PGRAY 2) and geophysical anomaly	
Group 1	Drainage	123	Southeast of Bldg 4036 footprint	Location of a catch basin (sample sediment inside)	
Group 1	Drainage	124	Northwest corner of Bldg 4032 footprint	Location of catch basin identified in Dwg 303-023-P1 (sample sediment inside)	
Group 1	Drainage	125	West of Building 4023 footprint	Location of catch basin identified in Dwg 303-023-P1 (sample sediment inside)	
Group 2	Surface	126	West area of group 2 and along 12th Street	Survey results indicate presence of a geophysical anomaly (buried metal indication with GPR)	
Group 2	Subsurface	126	West area of group 2 and along 12th Street	Survey results indicate presence of a geophysical anomaly (buried metal indication with GPR)	
Group 2	Subsurface	127	West area of group 2	Survey results indicate presence of a geophysical anomaly (buried metal indication with GPR)	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 2	Surface	127	West area of group 2	Survey results indicate presence of a geophysical anomaly (buried metal indication with GPR)	
Group 2	Subsurface	128	Area of KEWB Reactor Test Building and support structures	North of KEWB Exhaust Building (removed).	
Group 2	Subsurface	129	Area of KEWB Reactor Test Building and support structures	North of KEWB Electrical Building (removed).	High density radiologic sampling of feature (KEWB)
Group 2	Subsurface	130	Area of KEWB Reactor Test Building and support structures	East of KEWB Electrical Building (removed).	High density radiologic sampling of feature (KEWB)
Group 2	Surface	131	Area of KEWB Reactor Test Building and support structures	East of KEWB Reactor Test Building. Above ground structures removed but asphalt and concrete rubble left below ground.	High density radiologic sampling of feature (KEWB)
Group 2	Subsurface	131	Area of KEWB Reactor Test Building and support structures	East of KEWB Reactor Test Building. Above ground structures removed but asphalt and concrete rubble left below ground.	High density radiologic sampling of feature (KEWB)
Group 2	Surface	132	Area of KEWB Reactor Test Building and support structures	South of KEWB Ractor Test Building	
Group 2	Subsurface	132	Area of KEWB Reactor Test Building and support structures	South of KEWB Ractor Test Building. Above ground structures removed but asphalt and concrete rubble left below ground.	
Group 2	Surface	133	Area of KEWB Reactor Test Building and support structures	Southeast corner of KEWB Exhaust building	
Group 2	Subsurface	133	Area of KEWB Reactor Test Building and support structures	Southeast corner of KEWB Exhaust building. Above ground structures removed but asphalt and concrete rubble left below ground.	
Group 2	Surface	134	Area of KEWB Reactor Test Building and support structures	NW corner of KEWB Reactor Test Bldg in location of 1000 ga. liquid hold-up tank (Removed - HSA fig. 2.2.1c)	High density radiologic sampling of feature (KEWB)
Group 2	Subsurface	134	Area of KEWB Reactor Test Building and support structures	NW corner of KEWB Reactor Test Bldg in location of 1000 ga. liquid hold-up tank (Removed - HSA fig. 2.2.1c)	High density radiologic sampling of feature (KEWB)
Group 2	Surface	135	Area of KEWB Reactor Test Building and support structures	East of KEWB Waste Storage Building	High density radiologic sampling of feature (KEWB)
Group 2	Subsurface	135	Area of KEWB Reactor Test Building and support structures	East of KEWB Waste Storage Building	High density radiologic sampling of feature (KEWB)
Group 2	Surface	136	Area of KEWB Reactor Test Building and support structures	South of KEWB Waste Storage Building	
Group 2	Subsurface	136	Area of KEWB Reactor Test Building and support structures	South of KEWB Waste Storage Building	
Group 2	Surface	137	Area of KEWB Reactor Test Building and support structures	West of KEWB Waste Storage Building	
Group 2	Subsurface	137	Area of KEWB Reactor Test Building and support structures	West of KEWB Waste Storage Building	
Group 2	Surface	138	Area of KEWB Reactor Test Building and support structures	North of KEWB Waste Storage Building	
Group 2	Subsurface	138	Area of KEWB Reactor Test Building and support structures	North of KEWB Waste Storage Building	
Group 2	Subsurface	139	Area of KEWB Reactor Test Building and support structures	West of KEWB Reactor Test Bldg in location of 300 gallon gas hold-up tank (Removed - HSA fig. 2.2.1c)	
Group 2	Subsurface	140	Area of KEWB Reactor Test Building and support structures	SW of KEWB Reactor Test Bldg in location of 1000 ga. liquid hold-up tank (Removed - HSA fig. 2.2.1c)	High density radiologic sampling of feature (KEWB)
Group 2	Subsurface	141	Area of KEWB Reactor Test Building and support structures	SW of KEWB Reactor Test Bldg in location of 2-inch drain line (HSA fig. 2.2.1c)	
Group 2	Subsurface	142	Area of KEWB Reactor Test Building and support structures	SW of KEWB Reactor Test Bldg in location of 2-inch drain line (HSA fig. 2.2.1c)	High density radiologic sampling of feature (KEWB)
Group 2	Surface	143	Along 11th Street and west of RD-17 and east side of road	Sample is located along the "AC Ditch" that serves as a surface drainage. Sample to be collected just beneath asphalt.	
Group 2	Subsurface	143	Along 11th Street and west of RD-17 and east side of road	Sample is located along the "AC Ditch" that serves as a surface drainage.	
Group 2	Surface	144	Along 11th Street and north of RD-17 and east side of road	Sample is located along the "AC Ditch" that serves as a surface drainage. Sample to be collected just beneath asphalt.	
Group 2	Subsurface	144	Along 11th Street and north of RD-17 and east side of road	Sample is located along the "AC Ditch" that serves as a surface drainage.	
Group 2	Surface	145	Along 11th Street and northeast of RD-17 and east side of road	Sample is located along the "AC Ditch" that serves as a surface drainage. Sample to be collected just beneath asphalt.	
Group 2	Subsurface	145	Along 11th Street and northeast of RD-17 and east side of road	Sample is located along the "AC Ditch" that serves as a surface drainage.	
Group 2	Surface	146	Between KEWB Reactor Test Bldg and parking area to the east	Sample is located along the "AC Ditch" that serves as a surface drainage. Sample to be collected just beneath asphalt.	
Group 2	Subsurface	146	Between KEWB Reactor Test Bldg and parking area to the east	Sample is located along the "AC Ditch" that serves as a surface drainage.	
Group 2	Subsurface	147	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	148	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	
Group 2	Subsurface	149	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	150	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	151	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	
Group 2	Subsurface	152	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	153	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	154	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 2	Subsurface	155	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	156	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	
Group 2	Subsurface	157	Area southwest of building 4093.	Results of the geophysical survey in this area indicate the presence of buried pipe in a leach field config. and debris	High density radiologic sampling of feature (Building 93 Leachfield)
Group 2	Subsurface	158	Area southwest of Control Building	Downstream of 6-inch galvanized pipe end	
Group 2	Subsurface	159	Area west of building 4093	Downstream of 6-inch pipe end	
Group 2	Subsurface	160	Area southwest of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	
Group 2	Subsurface	161	Area southwest of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	
Group 2	Subsurface	162	Area southwest of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	High density radiologic sampling of feature (AE-6)
Group 2	Subsurface	163	Area southwest of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	
Group 2	Subsurface	164	Area southeast of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	High density radiologic sampling of feature (AE-6)
Group 2	Subsurface	165	Area southeast of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	
Group 2	Subsurface	166	Area north of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	
Group 2	Subsurface	167	Area north of Building 4093	Along the remaining concrete slab edge with intention of sampling as close as possible to AE-6 reactor location	
Group 2	Subsurface	168	Area north of Building 4083	Sample is located along the "AC Ditch" that serves as a surface drainage. Sample to be collected just beneath asphalt.	
Group 2	Subsurface	169	Area north of Building 4083	Sample is located along the "AC Ditch" that serves as a surface drainage. Sample to be collected just beneath asphalt.	
Group 2	Drainage	170	Area north of Building 4083	Sample is located along a floor trench that contains enough sediment for sampling	
Group 2	Surface	171	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Subsurface	171	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Surface	172	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Subsurface	172	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Surface	173	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Subsurface	173	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Surface	174	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 2	Subsurface	174	Fuel Handling Building to the south of building 4093	Along each edge of the remaining concrete slab to verify absence of subsurface radiological contamination	
Group 4	Drainage	175	Western portion of group 4 in area of Building 4005	Ground/floor trench 12 inches wide and 8 inches deep covered with steel grating installed to collect drainage	
Group 4	Drainage	176	Western portion of group 4 in area of Building 4005	Ground/floor trench 12 inches wide and 8 inches deep covered with steel grating installed to collect drainage	
Group 4	Drainage	177	Western portion of group 4 in area of Building 4005	Ground/floor trench 12 inches wide and 8 inches deep covered with steel grating installed to collect drainage. Sample omitted due to occurrence in a DOE "Likely Remediation Zone" and the structure will likely be removed during remediation.	Clearly contaminated area (PDU)
Group 4	Drainage	178	Western portion of group 4 in area of Building 4005	Ground/floor trench 12 inches wide and 8 inches deep covered with steel grating installed to collect drainage	
Group 4	Drainage	179	Western portion of group 4 in area of Building 4005	Ground/floor trench 12 inches wide and 8 inches deep covered with steel grating installed to collect drainage	
Group 4	Surface	180	Area between 17th Street and Building 4005	Location of a Septic Tank (previously removed)	
Group 4	Subsurface	180	Area between 17th Street and Building 4005	Location of a Septic Tank (previously removed)	
Group 4	Surface	181	Area between 17th Street and Building 4005	Location of a Septic Tank (previously removed)	
Group 4	Subsurface	181	Area between 17th Street and Building 4005	Location of a Septic Tank (previously removed)	
Group 4	Drainage	182	Western portion of group 4 in area of Building 4005	Location of a grated sump. Sample omitted due to occurrence in a DOE "Likely Remediation Zone" and the structure will likely be removed during remediation.	Clearly contaminated area (PDU)

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 4	Drainage	183	Western portion of group 4 in area of Building 4005	Location of a grated sump. Sample omitted due to occurrence in a DOE "Likely Remediation Zone" and the structure will likely be removed during remediation.	Clearly contaminated area (PDU)
Group 4	Surface	184	Area between Building 4049 and Building 4005	Location of a ponding area between buildings 4049 and 4005. Surface sample omitted due to occurrence in a DOE "Likely Remediation Zone" and surface soil will likely be excavated.	Clearly contaminated area (PDU)
Group 4	Subsurface	184	Area between Building 4049 and Building 4005	Location of a ponding area between buildings 4049 and 4005.	
Group 4	Surface	185	Area between Building 4049 and Building 4005	Location of a ponding area between buildings 4049 and 4005. Surface sample omitted due to occurrence in a DOE "Likely Remediation Zone" and surface soil will likely be excavated.	Clearly contaminated area (PDU)
Group 4	Subsurface	185	Area between Building 4049 and Building 4005	Location of a ponding area between buildings 4049 and 4005. Surface sample omitted due to occurrence in a DOE "Likely Remediation Zone" and surface soil will likely be excavated.	Clearly contaminated area (PDU)
Group 4	Surface	186	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Subsurface	186	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Surface	187	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Subsurface	187	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Surface	188	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Subsurface	188	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Surface	189	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Subsurface	189	Area northeast of Building 4005	Location of radioactive liquid hold-up tank (removed).	
Group 4	Drainage	190	Southwest corner of group 4 just east of 17th Street	Location of concrete junction box for both storm water collection lines/trench before diversion into 17th St. drainage	
Group 4	Drainage	191	Southwest corner of group 4 just east of 17th Street	Location of concrete junction box for both storm water collection lines/trench before diversion into 17th St. drainage	
Group 4	Drainage	192	Southwest corner of group 4 just east of 17th Street	Location of concrete junction box for both storm water collection lines/trench before diversion into 17th St. drainage	
Group 4	Drainage	193	Southwest corner of group 4 just east of 17th Street	Location of concrete junction box for both storm water collection lines/trench before diversion into 17th St. drainage	
Group 4	Drainage	194	Southwest corner of group 4 just east of 17th Street	Ground/floor trench 12 inches wide and 8 inches deep covered with steel grating installed to collect drainage	
Group 4	Drainage	195	Southwest corner of group 4 just east of 17th Street	Location of concrete junction box for both storm water collection lines/trench before diversion into 17th St. drainage	
Group 4	Drainage	196	Southwest corner of group 4 just east of 17th Street and north of G Street	Location of surface drainage channel that runs along G Street	
Group 4	Surface	197	Southwest corner of group 4 just east of 17th Street and north of G Street	Scan results indicate presence of elevated gamma radiation	
Group 4	Subsurface	197	Southwest corner of group 4 just east of 17th Street and north of G Street	Scan results indicate presence of elevated gamma radiation	
Group 4	Subsurface	198	Southwest corner of group 4 just east of 17th Street and north of G Street	Location of an "Open Storage" aerial photography feature and geophysical anomaly with terrain conductivity meter.	
Group 4	Subsurface	199	Southwest corner of group 4 just east of 17th Street and north of G Street	Location of an "Ground Scar" aerial photography feature	
Group 4	Subsurface	200	Southwest corner of group 4 just east of 17th Street and north of G Street	Location of an "Dark Toned Material" aerial photography feature	
Group 4	Subsurface	201	Southwest corner of group 4 just east of 17th Street and north of G Street	Location of an "Possible Stain" aerial photography feature	
Group 4	Subsurface	202	Eastern portion of group 4	Along the curved "AC Ditch"	
Group 4	Subsurface	203	Eastern portion of group 4	Along the curved "AC Ditch"	
Group 4	Subsurface	204	Eastern portion of group 4	Along the curved "AC Ditch"	
Group 4	Subsurface	205	Eastern portion of group 4	Along the curved "AC Ditch"	
Group 4	Subsurface	206	Eastern portion of group 4	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	207	Eastern portion of group 4	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	208	Eastern portion of group 4	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	209	Eastern portion of group 4	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Surface	210	Southeast corner of group 4	Location of potential gamma anomaly and buried metal with GPR	
Group 4	Subsurface	210	Southeast corner of group 4	Location of potential gamma anomaly and buried metal with GPR	
Group 4	Surface	211	Southeast corner of group 4	Location of potential gamma anomaly and anomaly with terrain conductivity meter	
Group 4	Subsurface	211	Southeast corner of group 4	Location of potential gamma anomaly and anomaly with terrain conductivity meter	
Group 4	Surface	212	Southeast corner of group 4	Location of potential geophysical anomaly with terrain conductivity meter	
Group 4	Subsurface	212	Southeast corner of group 4	Location of potential geophysical anomaly with terrain conductivity meter	
Group 4	Subsurface	213	Southeast corner of group 4	Location of potential geophysical anomaly with terrain conductivity meter	
Group 4	Surface	214	Southeast corner of group 4	Location of potential geophysical anomaly with terrain conductivity meter	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 4	Subsurface	214	Southeast corner of group 4	Location of potential geophysical anomaly with terrain conductivity meter	
Group 4	Surface	215	Southeast corner of group 4	Location of potential geophysical anomaly with magnetometer	
Group 4	Subsurface	215	Southeast corner of group 4	Location of potential geophysical anomaly with magnetometer	
Group 4	Subsurface	216	Southeast corner of group 4	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Drainage	217	Southeast corner of group 4	Location of surface drainage channel that runs along 12th Street	
Group 4	Drainage	218	Southeast corner of group 4	Location of surface drainage channel that runs along 12th Street	
Group 3	Subsurface	219	Between Buildings 4035 and 4641 footprints	Potential location of Building 4046 septic tank and leach field drain lines. Target sample collection interval is 5 - 10 feet bgs.	
Group 3	Subsurface	220	Between Buildings 4035 and 4641 footprints	Potential location of Building 4046 septic tank and leach field drain lines. Target sample collection interval is 5 - 10 feet bgs.	
Group 3	Subsurface	221	Between Buildings 4035 and 4641 footprints	Potential location of Building 4046 septic tank and leach field drain lines. Target sample collection interval is 5 - 10 feet bgs.	
Group 3	Subsurface	222	Between Buildings 4035 and 4641 footprints	Potential location of Building 4046 septic tank and leach field drain lines. Target sample collection interval is 5 - 10 feet bgs.	
Group 4	Subsurface	223	North central portion of group 4 in vicinity of Building 4042 footprint	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	224	North central portion of group 4 in vicinity of Building 4042 footprint	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	225	North central portion of group 4 in vicinity of Building 4042 footprint	Location of ponding area	
Group 4	Subsurface	226	North central portion of group 4 in vicinity of Building 4042 footprint	Location of ponding area	
Group 4	Subsurface	227	North central portion of group 4 in vicinity of Building 4042 footprint	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	228	North central portion of group 4 in vicinity of Building 4042 footprint	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	229	North central portion of group 4 in vicinity of Building 4042 footprint	Geophysical survey with GPR indicates presence of buried metal	
Group 4	Subsurface	230	North central portion of group 4 in vicinity of Building 4042 footprint	Geophysical survey with GPR indicates presence of buried metal. Sample omitted due to occurrence in a DOE "Likely Remediation Zone" and the geophysical anomaly will likely be excavated.	Clearly contaminated area (PDU)
Group 4	Subsurface	231	Central portion of group 4	Location of aerial photography feature POSS LTMM	
Group 4	Subsurface	232	Central portion of group 4	Location of aerial photography feature POSS LTMM	
Group 1	Surface	233	Northeast corner of Building 4032 footprint	Scan results indicate presence of elevated gamma radiation	
Group 1	Subsurface	233	Northeast corner of Building 4032 footprint	Scan results indicate presence of elevated gamma radiation	
Group 1	Subsurface	234	Within Building 4032 footprint	Location of aerial photography feature LTMM	
Group 1	Subsurface	235	Within Building 4032	Location of aerial photography feature LTMM	
Group 1	Subsurface	236	Southeast of Building 4024	Location of aerial photography feature OS-19	
Group 1	Subsurface	237	West of Building 4024	Location of aerial photography feature OS-2	
Group 1	Subsurface	238	West of Building 4024	Location of aerial photography feature OS-2	
Group 4	Subsurface	239	Southwest portion of group 4	Location of aerial photography feature OS	
Group 4	Subsurface	240	Southwest portion of group 4	Location of aerial photography feature OS	
Group 5	Drainage	241	South central area of group 5	In drainage channel that cuts thru former SE Drum Storage Yard	
Group 5	Surface	242	South central area of group 5	Within location of storage area known as "South East Drum Storage Yard"	
Group 5	Subsurface	242	South central area of group 5	Within location of storage area known as "South East Drum Storage Yard"	
Group 5	Subsurface	243	South central area of group 5	Within location of storage area known as "South East Drum Storage Yard"	
Group 1	Subsurface	244	Northwest corner of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 1-5 feet bgs.	
Group 1	Subsurface	244	Northwest corner of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 35-40 feet bgs.	
Group 1	Subsurface	245	West of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 1-5 feet bgs.	
Group 1	Subsurface	245	West of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 35-40 feet bgs.	
Group 1	Subsurface	246	Southwest corner of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 1-5 feet bgs.	
Group 1	Subsurface	246	Southwest corner of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 35-40 feet bgs.	
Group 1	Subsurface	247	South of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 1-5 feet bgs.	
Group 1	Subsurface	247	South of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 35-40 feet bgs.	
Group 1	Subsurface	248	East of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 1-5 feet bgs.	
Group 1	Subsurface	248	East of Building 4024	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination. Collection interval is 35-40 feet bgs.	
Group 1	Subsurface	249	West of Building 4032 footprint	Request during Stakeholder meeting on 2Feb11 to target potential location of 5500-ga. sodium drain tank.	
Group 1	Surface	250	North corner of Building 4027 footprint	Scan results indicate presence of a potential gamma anomaly (PGRAY 1)	

Table 1
Summary of Soil Sample Locations in Subarea 5A

Grouping	Sample Type	Location ID	LocationDescription	TechnicalJustification	Rationale for Exclusion of Location from Sampling
Group 1	Subsurface	250	North corner of Building 4027 footprint	Scan results indicate presence of a potential gamma anomaly (PGRAY 1)	
Group 2	Surface	251	South of building 4073 footprint but immediately north of 11th Steet	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 2	Subsurface	251	South of building 4073 footprint but immediately north of 11th Steet	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 2	Subsurface	252	South of building 4093 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 2	Surface	253	Area between 11th Street and 12th Street	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 2	Subsurface	253	Area between 11th Street and 12th Street	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 2	Subsurface	254	South of building 4453 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Surface	255	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Subsurface	255	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Surface	256	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Subsurface	256	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Surface	257	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Subsurface	257	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	
Group 3	Subsurface	258	Inside building 4030 footprint	Request during Stakeholder meeting on 2Feb11 to target potential subsurface radiological contamination.	

Notes:

AST - aboveground storage tank

bgs - below ground surface

D&D - decontamination and decommissioning

HSA - Historical Site Assessment

IM - impoundment

KEWB - Kinetics Experiment Water Boiler

OS - open storage

MTMM - medium toned mounded material

SS - site specific

SSFL - Santa Susana Field Laboratory

WDA - waste disposal area

Locations will not be sampled for chemical analytes by DOE/DTSC

Locations will not be sampled by EPA for radionuclides nor by DOE/DTSC for chemicals