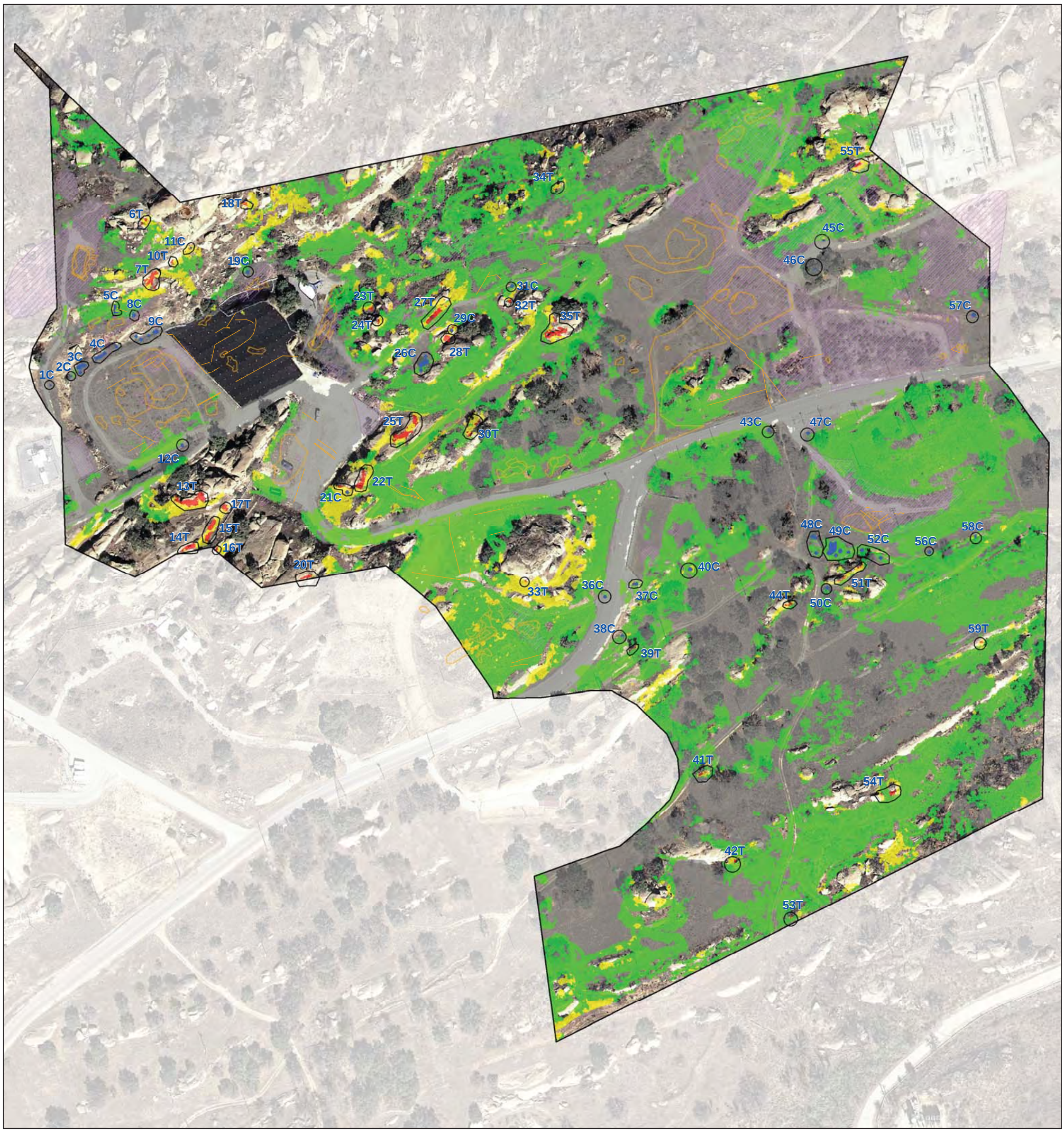
ATTACHMENT 3

HSA, Geophysical and Gamma Anomalies Subarea 6
Geophysical Anomalies Subarea 6
Past Radiological Soil Investigations Subarea 6 – Map 1
Past Radiological Soil Investigations Subarea 6 – Map 2
Past Radiological Soil Investigations Subarea 6 – Map 3
Past Radiological Soil Investigations Subarea 6 – Map 4
Aerial Photo Features Subarea 6
Process Knowledge Subarea 6



Legend

- Geophayical Anomalies
- HSA
- Cs137
- Static Count Area
- SubArea 6 Boundary

Centerline Roads

- PRIMARY ROADS
- SECONDARY ROADS
- TERTIARY ROADS

Total Count (CPS)

13000 14800 16600 18400

N

0 80 160 320

Scale In Feet

HSA, Geophsyical and Gamma Anomalies
Subarea 6
Santa Susana Field Laboratory

U.S. EPA Region 9

Path: \\gst-srv-01\gmap\Santa_Susana\EP9038\GammaScanning\Sub_Area_6_HSA_Geophayisical_Gamma_Static_Count_20110608.mxd
Project: EP9038
Edited: 06/08/11 PL
Source:Boeing Company, 2008
CIRGIS, 2007

HGL HydroGeoLogic, Inc

Legend

Subarea 6 Groups

Centerline Roads

- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings

- Demolished
- Existing

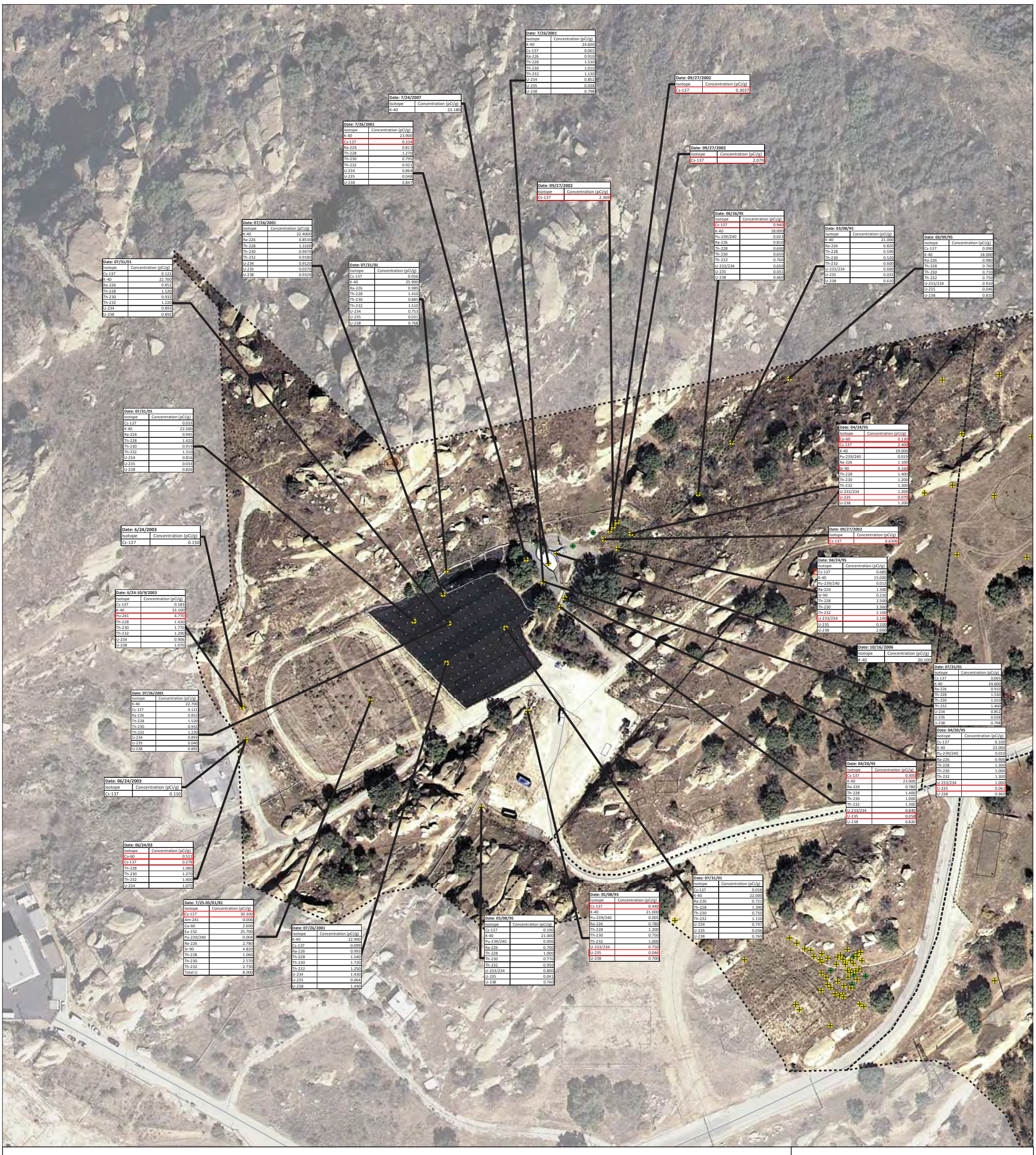
Geophysical Anomalies

- Magnetometer
- Terrain Conductivity
- Ground Penetrating Radar
- Magnetometer
- Terrain Conductivity
- Ground Penetrating Radar
- Magnetometer
- Terrain Conductivity
- Ground Penetrating Radar
- Magnetometer Anomaly Area
- Terrain Conductivity Fill

Geophysical Anomalies
Subarea 6
Santa Susana Field Laboratory

U.S. EPA Region 9

Y:\Santa_Susana\EP9038\Geophysical
Subarea6_Geophysical_Anomaly_20110613.mxd
6/14/2011 pbillock
Source:HGL 2010, CIRGIS 2007



Legend

- Above NDA
- Below NDA
- Subarea 6 Groups
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Demolished
- Existing

N

0 100 200
Scale In Feet

Past Radiological Soil Investigations
Subarea 6 - Map 1
Santa Susana Field Laboratory

U.S. EPA Region 9

Y:\Santa_Susana\EP9038\RadSoil
Subarea6_RadSoil_Map1.mxd
6/13/2011 sdrallos-kopecky
Source:HGL 2010, CIRGIS 2007

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.530
Bi-214	1.060
K-40	17.000
Pb-212	1.190
Pb-214	0.940
Th-232	1.530
Ti-208	0.360
U-234	0.690
U-235	0.046
U-238	0.820

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.180
Bi-214	1.010
Cs-137	1.160
K-40	17.700
Pb-212	1.060
Pb-214	0.960
Th-232	1.180
Ti-208	0.470
U-234	0.910
U-238	0.790

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.340
Bi-214	0.980
K-40	20.500
Pb-212	1.090
Pb-214	1.120
Th-232	1.340
Ti-208	0.390
U-234	1.080
U-238	1.150

Date: 03/08/95

Isotope	Concentration (pCi/g)
K-40	21.000
Ra-226	0.850
Th-228	0.510
Th-230	0.430
Th-232	0.560
U-233/234	0.650
U-235	0.043
U-238	0.620

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.250
Bi-214	0.880
Eu-154	0.160
K-40	18.400
Pb-212	1.090
Pb-214	1.150
Th-232	1.250
Ti-208	0.390
U-234	0.880
U-238	0.830

Date: 03/08/95

Isotope	Concentration (pCi/g)
K-40	22.000
Pu-239/240	0.010
Ra-226	0.880
Th-228	0.600
Th-230	0.560
Th-232	0.610
U-233/234	0.660
U-235	0.036
U-238	0.660

Date: 03/08/95

Isotope	Concentration (pCi/g)
Cs-137	0.080
K-40	20.000
Ra-226	0.900
Th-228	0.920
Th-230	0.750
Th-232	0.850
U-233/234	0.580
U-235	0.028
U-238	0.530

Date: 03/08/95

Isotope	Concentration (pCi/g)
Cs-137	0.120
K-40	19.000
Ra-226	0.740
Th-228	0.700
Th-230	0.500
Th-232	0.710
U-233/234	0.580
U-235	0.040
U-238	0.590

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.440
Bi-214	1.080
K-40	19.600
Pb-212	1.300
Pb-214	0.940
Th-232	1.440
Ti-208	0.570
U-234	0.700
U-235	0.052
U-238	0.800

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.000
Bi-212	0.810
Bi-214	0.960
K-40	20.700
Pb-212	0.960
Pb-214	1.020
Th-232	1.000
Ti-208	0.369
U-234	0.990
U-238	1.100

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.120
Bi-214	0.780
Eu-154	0.140
K-40	19.800
Pb-212	0.900
Pb-214	0.750
Th-232	1.120
Ti-208	0.324
U-234	1.120
U-238	0.960

Date: 06/19/95

Isotope	Concentration (pCi/g)
Cs-137	0.060
K-40	23.000
Ra-226	0.950
Th-228	1.300
Th-230	1.000
Th-232	1.300
U-233/234	0.900
U-235	0.053
U-238	0.940

Date: 1988

Isotope	Concentration (pCi/g)
Co-60	0.130
Cs-137	30.590
K-40	73.490
Th-232	2.670
U-238	1.830

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.280
Bi-214	0.910
K-40	19.100
Pb-212	1.310
Pb-214	0.970
Th-232	1.280
Ti-208	0.520
U-234	0.700
U-235	0.041
U-238	0.770

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.160
Bi-214	1.080
Eu-154	0.180
K-40	21.000
Pb-212	1.310
Pb-214	0.980
Th-232	1.160
Ti-208	0.450
U-234	0.950
U-235	0.028
U-238	0.840

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.270
Bi-212	0.840
Bi-214	1.110
K-40	21.000
Pb-212	1.210
Pb-214	1.140
Th-232	1.270
Ti-208	0.410
U-234	0.830
U-235	0.023
U-238	1.020

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.250
Bi-212	1.090
Bi-214	1.010
K-40	21.100
Pb-212	1.290
Pb-214	1.160
Th-232	1.250
Ti-208	0.431
U-234	0.920
U-238	1.090

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	1.270
Bi-214	1.040
K-40	20.000
Pb-212	1.360
Pb-214	1.110
Th-232	1.270
Ti-208	0.457
U-234	0.700
U-238	0.610

Date: 12/7/2006

Isotope	Concentration (pCi/g)
Ac-228	0.850
Bi-214	0.740
K-40	21.500
Pb-212	0.920
Pb-214	0.710
Th-232	0.850
Ti-208	0.260
U-234	0.560
U-235	0.038
U-238	0.640

Legend

- Above NDA
- Below NDA
- ScreenLayer
- Subarea 6 Groups
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Demolished
- Existing

Past Radiological Soil Investigations
Subarea 6 - Map 2
Santa Susana Field Laboratory

U.S. EPA Region 9

Y:\Santa_Susana\EP9038\RadSoil
Subarea6_RadSoil_Map2.mxd
6/13/2011 sdrallos-kopecky
Source:HGL 2010, CIRGIS 2007

Legend

- Above NDA
- Below NDA
- Subarea 6 Groups
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Demolished
- Existing

Past Radiological Soil Investigations
Subarea 6 - Map 3
Santa Susana Field Laboratory

U.S. EPA Region 9

Y:\Santa_Susana\EP9038\RadSoil
Subarea6_RadSoil_Map3.mxd
6/13/2011 sdrallos-kopecky
Source:HGL 2010, CIRGIS 2007

Legend

- Above NDA
- Below NDA
- Subarea 6 Groups
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Demolished
- Existing

Past Radiological Soil Investigations
Subarea 6 - Map 4
Santa Susana Field Laboratory

U.S. EPA Region 9

Y:\Santa_Susana\EP9038\RadSoil
Subarea6_Radsoil_Map4.mxd
6/14/2011 pbillock
Source:HGL 2010, CIRGIS 2007

Legend

HSA Sub-Area 6 Boundary

Centerline Roads
- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings
- Demolished
- Existing

Surface Water
- Intermittent Stream
- Permanent Stream
- Surface Water
- Lined Channel

Tanks
- Above ground Storage Tank
- Underground Storage Tank
- Unknown Tank Type
- French Drain Holding Tank
- Sump
- Dry Well
- Tank Footprint

- French Drain
- Drainage
- Leach Field
- Septic System

Aerial Photography Data
- Aerial Photography Features
- Septic Tank
- Leach Field / Septic Tank
- Parking Lots
- Drainage
- Drainage Ditch
- Interview Line

- Offsite Seeps and Springs
- Onsite Seeps and Springs
- Drain
- Well

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

Aerial Photography Descriptors

Type	Description
B	Building
CA	Cleared Area
CONT	Container
CR	Crates
DB	Debris
DG	Disturbed Ground
DTM	Dark Tone Material
EX	Excavation
FA	Fill Area
GR	Graded
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
UT	Underground Tank
VT	Vertical Tank
WDA	Waste Disposal Area

Surface Features
- Channel
- Drain
- Drain
- Drainage Divide
- Gutter
- Tank
- Tank
- Vault
- Well

Utilities
- Gas
- Storm Drain
- Sanitary Sewer
- Sanitary Waste
- Water
- Water (Removed)

N

0 50 100 200
Scale In Feet

Historical Site Assessment
Draft Technical Memorandum - HSA-6

Aerial Photo Features
Subarea HSA-6
Santa Susana Field Laboratory

U.S. EPA Region 9

Filepath:Y:/Santa_Susana/EP9038/TM/HSA_6/HSA-6_Plate1.mxd
Project: EP9038
Edited: 04/28/11 TJ
Source:Boeing Company, 2008
CIRGIS, 2007

Legend

Subarea 6 Groups

Centerline Roads
- Primary Roads
- Secondary Roads
- Tertiary Roads

Buildings
- Demolished
- Existing
- Parking Lots

Surface Water
- Intermittent Stream
- Permanent Stream
- Surface Water
- Lined Channel

Process Knowledge Data
- Process Knowldedge Features

Utilities
- Gas
- Storm Drain
- Sanitary Sewer
- Sanitary Waste
- Water
- Water (Removed)

Surface Features
- Channel
- Drain
- Drain
- Drainage Divide
- Gutter
- Tank
- Tank
- Vault
- Well

N

0 25 50 100
Scale In Feet

Historical Site Assessment
Draft Technical Memorandum - HSA-6

Processed Knowledge and Past Operational Practices Subarea 6 Santa Susana Field Laboratory

U.S. EPA Region 9

Y:\Santa_Susana\EP9038\TM\HSA_6
HSA-6_ProcessKnowledge_Group1_RRR_20110607.mxd
6/13/2011 pbillock
Source:HGL 2010, CIRGIS 2007