

**APPENDIX E**

**PRE- AND POST-EXCAVATION FIGURES AND TABLES**

## **Appendix E – Pre- and Post-Excavation Figures and Tables**

### **Table of Contents**

#### **E-1 Figure Views for Phase III ISRA Areas**

- Figure E-1.1 Figure Views for Phase III ISRA Areas, Eastern Outfall 009 Watershed.
- Figure E-1.2 Figure Views for Phase III ISRA Areas, Western Outfall 009 Watershed.

#### **E-2 AP/STP-1B Pre-Excavation Figures and Tables**

- Figure E-2.1 Outfall 009 – ISRA Area AP/STP-1B, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-2.2 Outfall 009 – ISRA Area AP/STP-1B, Pre-Excavation Sample Results, Sub Surface Soils (2-10 feet bgs)
- Table E-2.1 AP/STP-1B Pre-Excavation Sample Results – Phase III ISRA Implementation

#### **AP/STP-1B Confirmation Figures and Tables**

- Figure E-2.3 Outfall 009 – ISRA Area AP/STP-1B, Confirmation Sample Results
- Table E-2.2 AP/STP-1B Confirmation Sample Results – Phase III ISRA Implementation

#### **E-3 AP/STP-1C-1 Pre-Excavation Figures and Tables**

- Figure E-3.1 Outfall 009 – ISRA Area AP/STP-1C-1, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-3.2 Outfall 009 – ISRA Area AP/STP-1C-1, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-3.1 AP/STP-1C-1 Pre-Excavation Sample Results – Phase III ISRA Implementation

### **AP/STP-1C-1 Confirmation Figures and Tables**

- Figure E-3.3 Outfall 009 – ISRA Area AP/STP-1C-1, Confirmation Sample Results Excavated
- Figure E-3.4 Outfall 009 – ISRA Area AP/STP-1C-1, Confirmation Sample Results In-Place
- Table E-3.2 AP/STP-1C-1 Confirmation Sample Results – Phase III ISRA Implementation

### **E-4 AP/STP-1C-2 Pre-Excavation Figures and Tables**

- Figure E-4.1 Outfall 009 – ISRA Area AP/STP-1C-2, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-4.2 Outfall 009 – ISRA Area AP/STP-1C-2, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-4.1 AP/STP-1C-2 Pre-Excavation Sample Results – Phase III ISRA Implementation

### **AP/STP-1C-2 Confirmation Figures and Tables**

- Figure E-4.3 Outfall 009 – ISRA Area AP/STP-1C-2, Confirmation Sample Results
- Table E-4.2 AP/STP-1C-2 Confirmation Sample Results – Phase III ISRA Implementation

### **E-5 AP/STP-1E Pre-Excavation Figures and Tables**

- Figure E-5.1 Outfall 009 – ISRA Area AP/STP-1E, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-5.2 Outfall 009 – ISRA Area AP/STP-1E, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-5.1 AP/STP-1E Pre-Excavation Sample Results – Phase III ISRA Implementation

### **AP/STP-1E Confirmation Figures and Tables**

- Figure E-5.3 Outfall 009 – ISRA Area AP/STP-1E, Confirmation Sample Results
- Table E-5.2 AP/STP-1E Confirmation Sample Results – Phase III ISRA Implementation

**E-6 ELV-1C Pre-Excavation Figures and Tables**

- Figure E-6.1 Outfall 009 – ISRA Area ELV-1C, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-6.2 Outfall 009 – ISRA Area ELV-1C, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-6.1 ELV-1C Pre-Excavation Sample Results – Phase III ISRA Implementation

**ELV-1C Confirmation Figures and Tables**

- Figure E-6.3 Outfall 009 – ISRA Area ELV-1C, Confirmation Sample Results
- Table E-6.2 ELV-1C Confirmation Sample Results – Phase III ISRA Implementation

**E-7 ELV-1D Pre-Excavation Figures and Tables**

- Figure E-7.1 Outfall 009 – ISRA Area ELV-1D, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-7.2 Outfall 009 – ISRA Area ELV-1D, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-7.1 ELV-1D Pre-Excavation Sample Results – Phase III ISRA Implementation

**ELV-1D Confirmation Figures and Tables**

- Figure E-7.3 Outfall 009 – ISRA Area ELV-1D, Confirmation Sample Results
- Table E-7.2 ELV-1D Confirmation Sample Results – Phase III ISRA Implementation

**E-8 IEL-2 Pre-Excavation Figures and Tables**

- Figure E-8.1 Outfall 009 – ISRA Area IEL-2, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-8.2 Outfall 009 – ISRA Area IEL-2, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-8.1 IEL-2 Pre-Excavation Sample Results – Phase III ISRA Implementation

### **IEL-2 Confirmation Figures and Tables**

- Figure E-8.3 Outfall 009 – ISRA Area IEL-2, Confirmation Sample Results
- Table E-8.2 IEL-2 Confirmation Sample Results – Phase III ISRA Implementation

### **E-9 IEL-3 Pre-Excavation Figures and Tables**

- Figure E-9.1 Outfall 009 – ISRA Area IEL-3, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-9.2 Outfall 009 – ISRA Area IEL-3, Pre-Excavation Sample Results, Sub Surface Soils (2-10 feet bgs)
- Table E-9.1 IEL-3 Pre-Excavation Sample Results – Phase III ISRA Implementation

### **IEL-3 Confirmation Figures and Tables**

- Figure E-9.3 Outfall 009 – ISRA Area IEL-3, Confirmation Sample Results
- Table E-9.2 IEL-3 Confirmation Sample Results – Phase III ISRA Implementation

### **E-10 LOX-1B-1 Pre-Excavation Figures and Tables**

- Figure E-10.1 Outfall 009 – ISRA Area LOX-1B-1, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)
- Figure E-10.2 Outfall 009 – ISRA Area LOX-1B-1, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)
- Table E-10.1 LOX-1B-1 Pre-Excavation Sample Results – Phase III ISRA Implementation

### **LOX-1B-1 Confirmation Figures and Tables**

- Figure E-10.3 Outfall 009 – ISRA Area LOX-1B-1, Confirmation Sample Results
- Table E-10.2 LOX-1B-1 Confirmation Sample Results – Phase III ISRA Implementation

### **E-11 LOX-1B-2 Pre-Excavation Figures and Tables**

Figure E-11.1 Outfall 009 – ISRA Area LOX-1B-2, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)

Figure E-11.2 Outfall 009 – ISRA Area LOX-1B-2, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)

Table E-11.1 LOX-1B-2 Pre-Excavation Sample Results – Phase III ISRA Implementation

### **LOX-1B-2 Confirmation Figures and Tables**

Figure E-11.3 Outfall 009 – ISRA Area LOX-1B-2, Confirmation Sample Results

Table E-11.2 LOX-1B-2 Confirmation Sample Results – Phase III ISRA Implementation

### **E-12 LOX-1B-3 Pre-Excavation Figures and Tables**

Figure E-12.1 Outfall 009 – ISRA Area LOX-1B-3 East, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)

Figure E-12.2 Outfall 009 – ISRA Area LOX-1B-3 West, Pre-Excavation Sample Results, Surface Soils (0-2 feet bgs)

Figure E-12.3 Outfall 009 – ISRA Area LOX-1B-3, Pre-Excavation Sample Results, Subsurface Soils (2-10 feet bgs)

Table E-12.1 LOX-1B-3 (East) Pre-Excavation Sample Results – Phase III ISRA Implementation

Table E-12.2 LOX-1B-3 (West) Pre-Excavation Sample Results – Phase III ISRA Implementation

### **LOX-1B-3 Confirmation Figures and Tables**

Figure E-12.4 Outfall 009 – ISRA Area LOX-1B-3, Confirmation Sample Results

Table E-12.3 LOX-1B-3 Confirmation Sample Results – Phase III ISRA Implementation

## APPENDIX E –Pre-Excavation and Confirmation Sample Result Tables

### Footnotes

#### Acronyms:

"--" – not analyzed / not applicable

BERA – Baseline Ecological Risk Assessment

bgs - below ground surface

CMS – Corrective Measures Study

COC – constituent of concern

DNQ – detected but not quantified

DTSC – Department of Toxic Substances Control

ECO RBSL – Ecological Risk-Based Screening Level

ISRA – Interim Source Removal Action

mg/kg – milligrams per kilogram

NPDES – National Pollutant Discharge Elimination System

PCBs – Polychlorinated biphenyl

pg/g - picograms per gram

RBSL – risk-based screening level

RCRA – Resource Conservation and Recovery Act

RES RBSL – Residential Human Health Risk-Based Screening Level

RME – Reasonable Maximum Exposure

RWQCB – Regional Water Quality Control Board

SRG – Soil Remediation Goal

TEF – toxic equivalency factor

TCDD TEQ – tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)

TRV = Toxicity Reference Value

**Acronyms, continued:**

ug/kg – micrograms per kilogram

VOCs – Volatile Organic Compounds

WHO – World Health Organization

**Data Validation or Laboratory Qualifiers:**

B – Analyte was detected in the associated Method Blank.

J – Estimated value. Analyte was detected at a level less than the RL and greater than or equal to the MDL. The user of this data should be aware that this data is of limited reliability.

E – Estimated value.

< – Result was not detected above the value shown.

\* – Result believed to be anomalous and is not shown on the sample result figure.

**Notes:**

Soil background values are from Soil Background Report, Santa Susana Field Laboratory, Ventura County, California (MWH, September 2005).

ISRA SRGs are established for ISRA COCs, including cadmium, copper, lead, mercury, and dioxins. SRGs for metals are equal to the 2005 background comparison concentration, and the SRG for dioxins is approximately 3 times the 2005 background comparison concentration. Soil background values are from the Soil Background Report, Santa Susana Field Laboratory, Ventura County, California (MWH, September 2005).

Grey highlighted cell indicates result exceeded the SRG.

Other screening values, including background, CMS and RBSL values, shown for reference purposes only.

RBSL values were provided to DTSC in the Interim Final Human Health and Ecological RBSLs for Use in RCRA Facility (MWH, March 2009). The two types of RBSLs are Ecological RBSLs, which were calculated at the 10% soil consumed fraction for the deer mouse, and Residential RBSLs, which are Human Health (RME) risk-based screening levels for a resident.

CMS screening levels are BERA TRV-based screening levels, which only include those chemicals with available TRV-high values previously-approved by DTSC were used. For those chemicals with a Characterization Screening Level RBSL based upon the soil invertebrate, then the next minimum RBSL for the next trophic level higher was chosen.



**Notes, continued:**

Dioxins/ TCDD TEQ - A sum of 17 dioxin / furan congener results adjusted for toxicity. The TEQ is calculated by multiplying the result of each congener by its respective 2005 WHO TEF, which is based on the relative potency of the congener to cause a toxic response relative to 2,3,7,8-TCDD. Non Detects are calculated as zero. TCDD TEQ values do not include laboratory data detected but not quantified (DNQ), as specified in NPDES Permit No. CA0001309.

Zero value for TCDD TEQ result indicates that all the analytical results used to calculate the TEQ were non-detect.

# Figure Views for Phase III ISRA Areas Eastern Outfall 009 Watershed

- Base Map Legend**
- Administrative Area Boundary
  - RFI Site Boundary
  - Soil Borrow Area
  - NPDES Outfall
  - Surface Water Divide
  - Drainage
  - Non Jurisdictional Surface Water Pathway
  - Previous Excavation Area
  - A/C Paving
  - Dirt Road
  - Elevation Contour

- Figure Legend**
- Actual ISRA Boundary
  - Planned ISRA Boundary
  - Former Planned ISRA Boundary

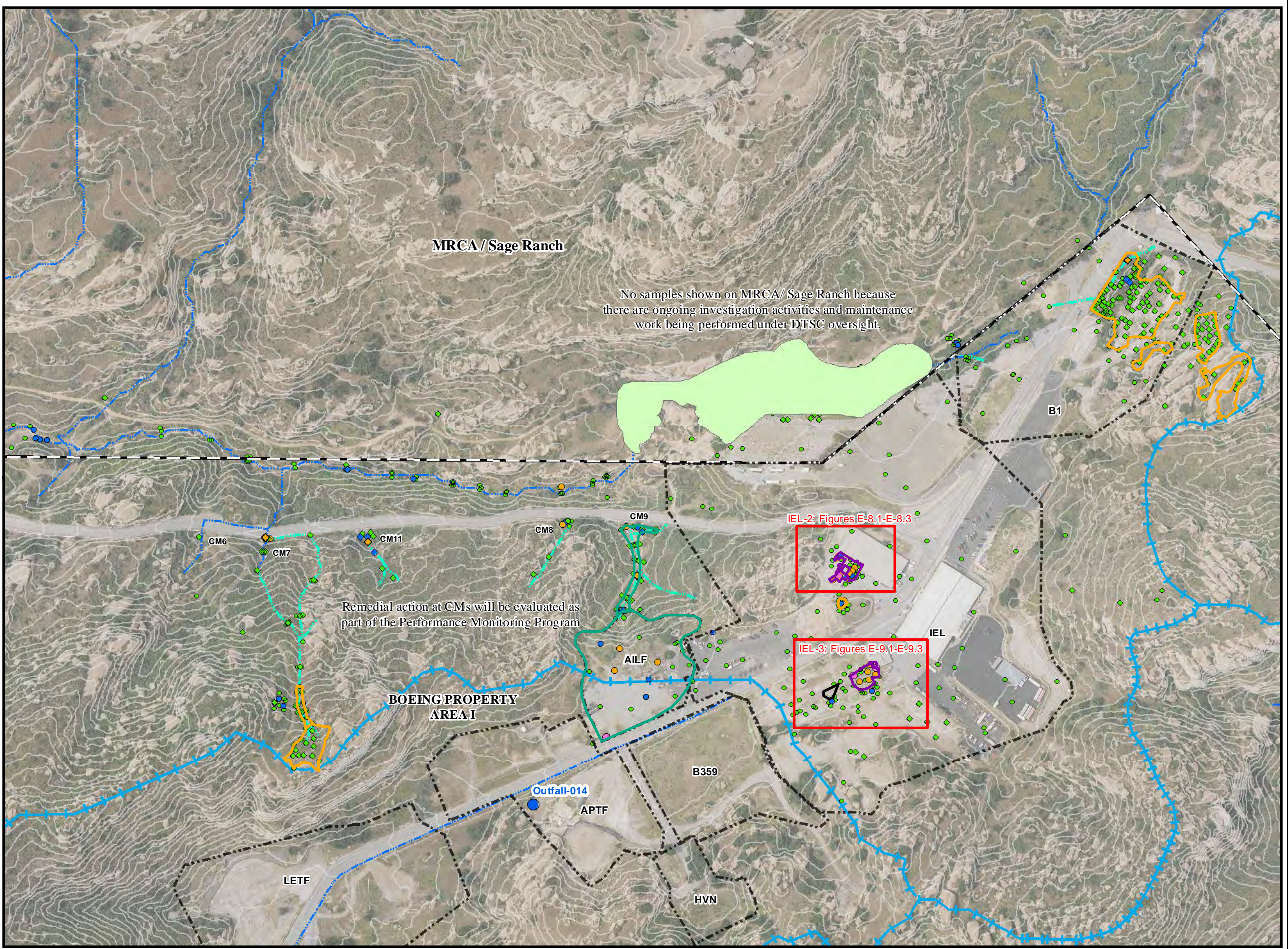
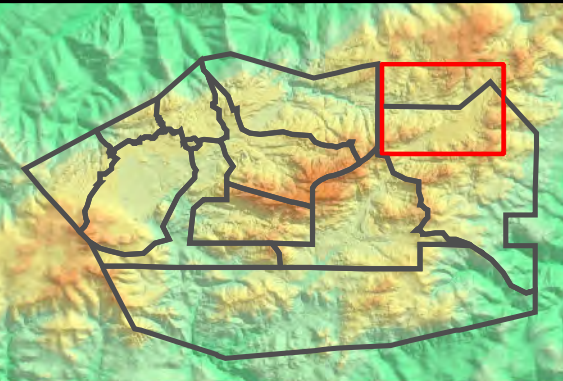
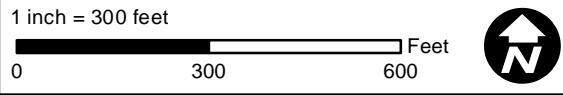
- Chemical Data Legend**
- Dioxin Sample Locations (< 2 feet bgs)**
- <= SRG
  - > SRG and <= 2x SRG
  - > 2x SRG and <= 10x SRG
  - > 10x SRG
- Metal Sample Locations (< 2 feet bgs)**
- <= SRG
  - > SRG and <= 2x SRG
  - > 2x SRG and <= 10x SRG
  - > 10x SRG

**ISRA COCs/SRGs**  
 Cadmium: 1 mg/kg  
 Copper: 29 mg/kg  
 Lead: 34 mg/kg  
 Mercury: 0.09 mg/kg  
 Dioxin: 3.0 pg/g

**Figure Notes:**

- Remedial work planned at ISRA areas within the AILF RFI Site, A2LF RFI Site, and select ISRA areas in the LOX RFI Site will be addressed by the Boeing RCRA Facility Investigation (RFI) Program and the NASA Administrative Order on Consent (AOC) program, respectively.
- Aerial imagery and topographic contours were collected June 2, 2010 by Sage Consultants, Inc., and represent pre-excavation conditions.

Path: T:\projects\rock3\ISRA\Figures\PhaseIII\_Report\FigE-1.1\_Dotmap\_East\_VIEWS.mxd  
 Date: 12/18/2013



# Figure Views for Phase III ISRA Areas Western Outfall 009 Watershed

- Base Map Legend**
- Administrative Area Boundary
  - Non Jurisdictional Surface Water Pathway
  - RFI Site Boundary
  - Previous Excavation Area
  - Soil Borrow Area
  - A/C Paving
  - NPDES Outfall
  - Dirt Road
  - Surface Water Divide
  - Elevation Contour
  - Drainage

- Figure Legend**
- Actual ISRA Boundary
  - Planned ISRA Boundary
  - Former Planned ISRA Boundary

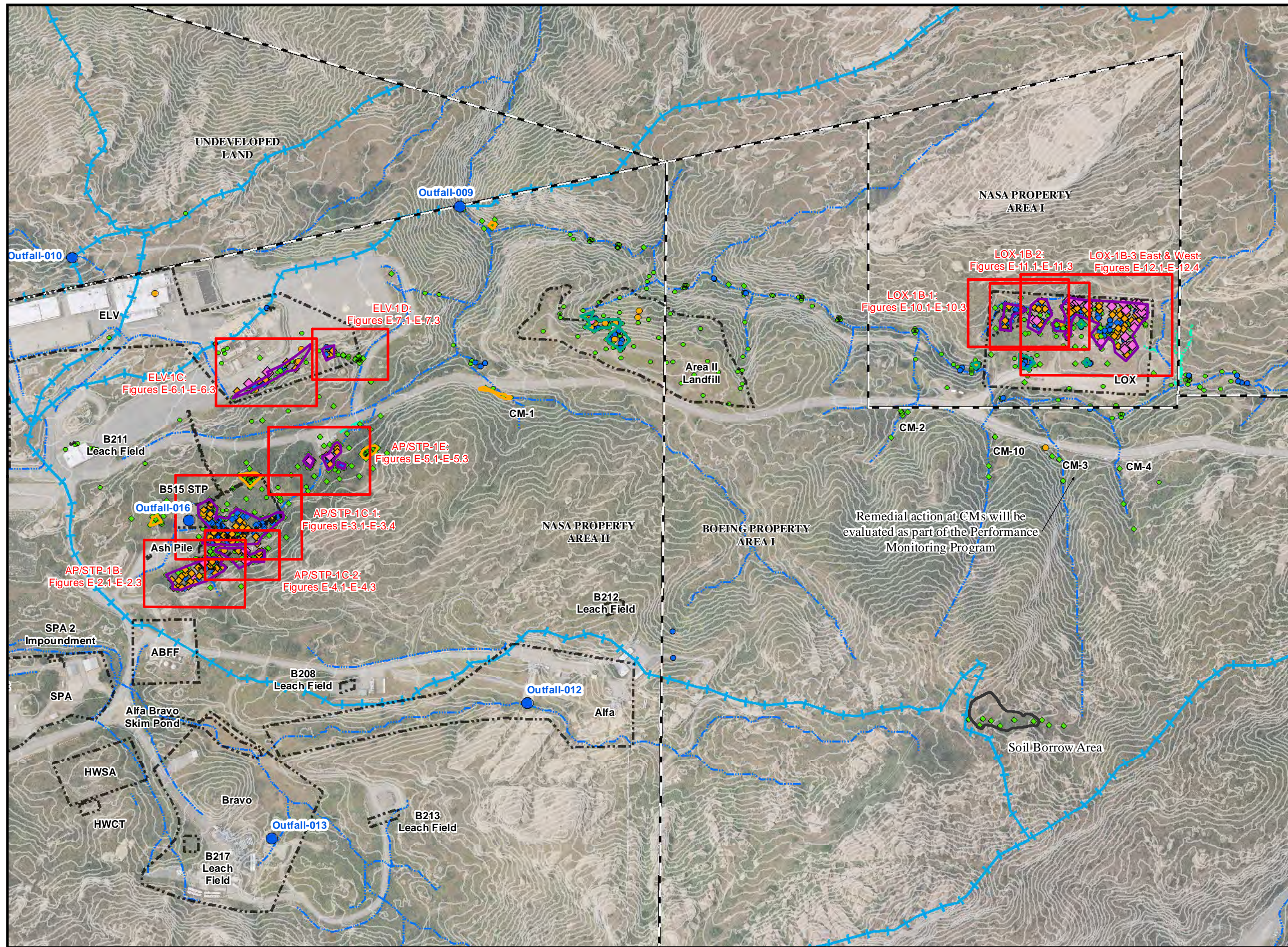
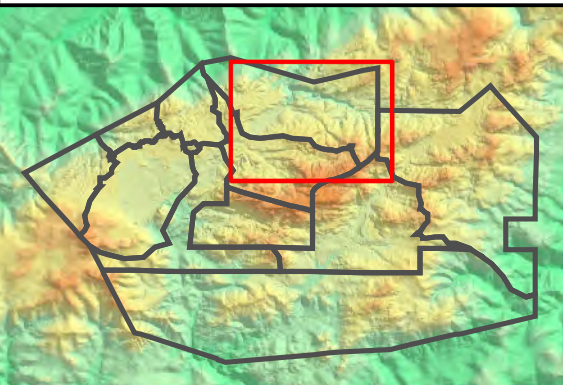
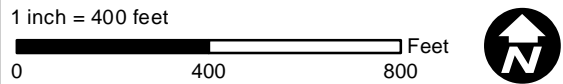
- Chemical Data Legend**
- Dioxin Sample Locations (< 2 feet bgs)**
- ≤ SRG
  - > SRG and ≤ 2x SRG
  - > 2x SRG and ≤ 10x SRG
  - > 10x SRG
- Metal Sample Locations (< 2 feet bgs)**
- ≤ SRG
  - > SRG and ≤ 2x SRG
  - > 2x SRG and ≤ 10x SRG
  - > 10x SRG

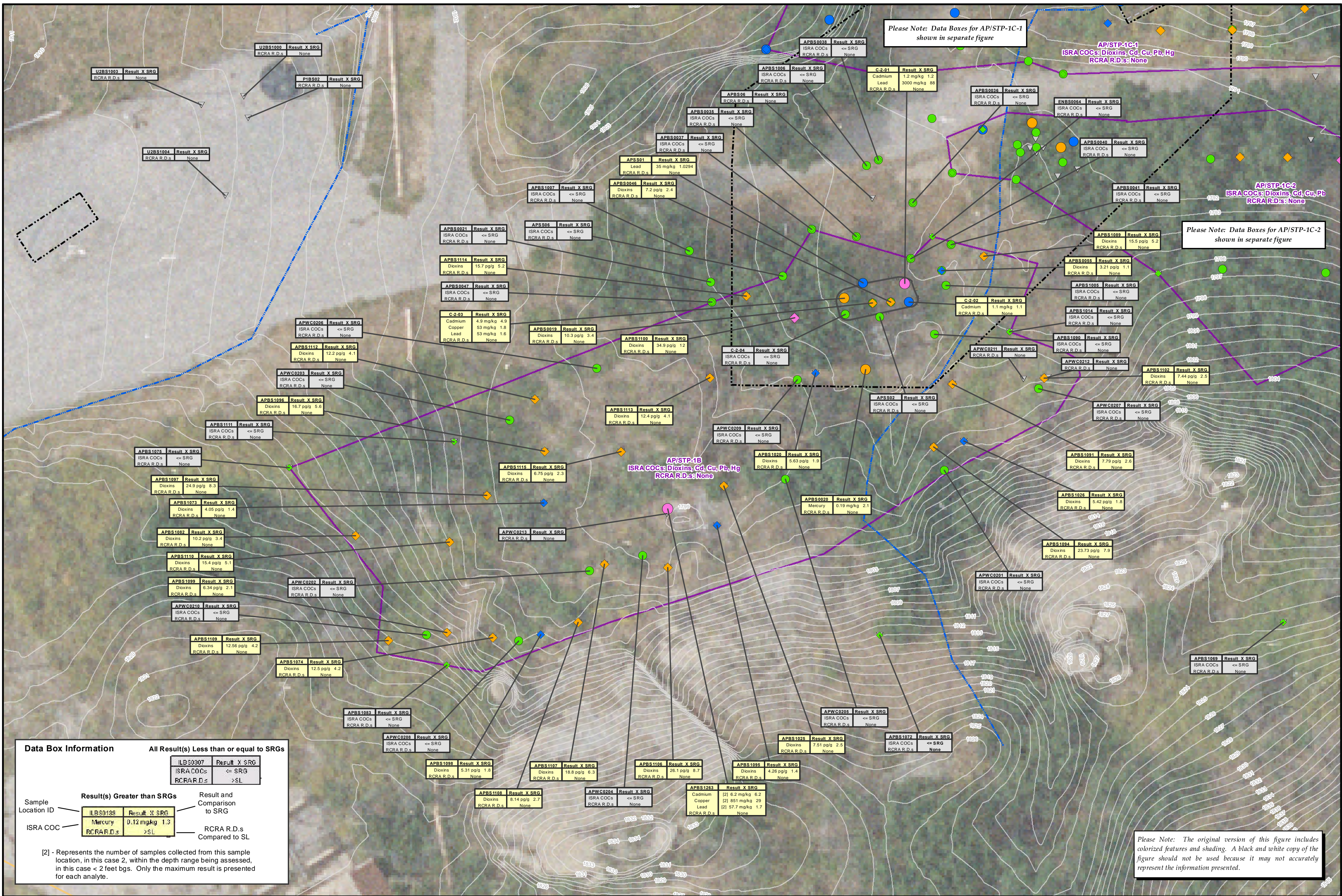
**ISRA COCs/SRGs**  
 Cadmium: 1 mg/kg  
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 Lead: 34 mg/kg  
 Mercury: 0.09 mg/kg  
 Dioxin: 3.0 pg/g

**Figure Notes:**

1. Remedial work planned at ISRA areas within the AILF RFI Site, A2LF RFI Site, and select ISRA areas in the LOX RFI Site will be addressed by the Boeing RCRA Facility Investigation (RFI) Program and the NASA Administrative Order on Consent (AOC) program, respectively.
2. Aerial imagery and topographic contours were collected June 2, 2010 by Sage Consultants, Inc., and represent pre-excavation conditions.

Path: T:\projects\rock3\ISRA\Figures\PhaseIII\_Report\FigE-1.2\_Dotmap\_West\_VIEWS.mxd  
 Date: 12/26/2013





**Data Box Information**

All Result(s) Less than or equal to SRGs

ILBS0307	Result X SRG
ISRA COCs	<= SRG
RCRA R.D.s	>SL

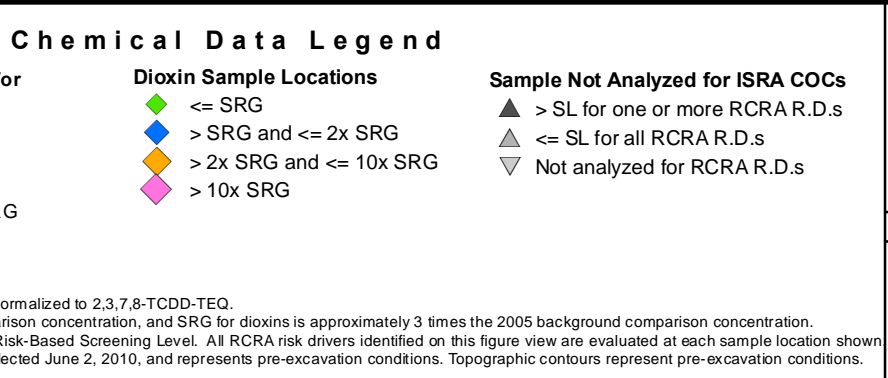
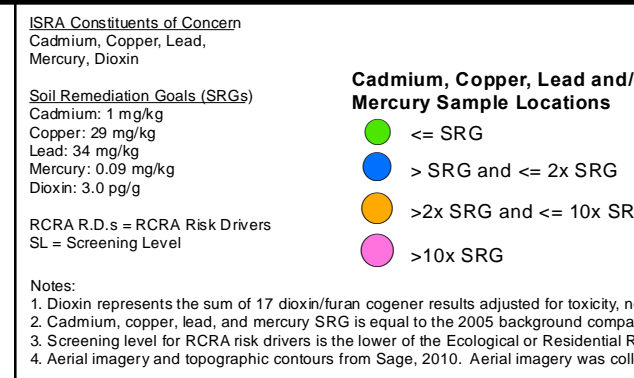
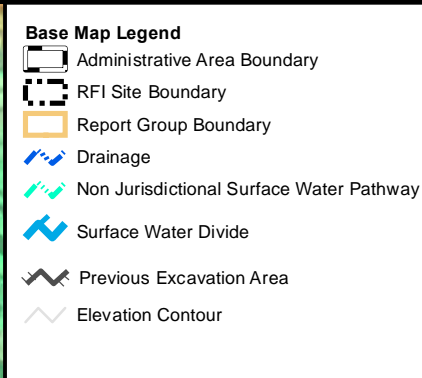
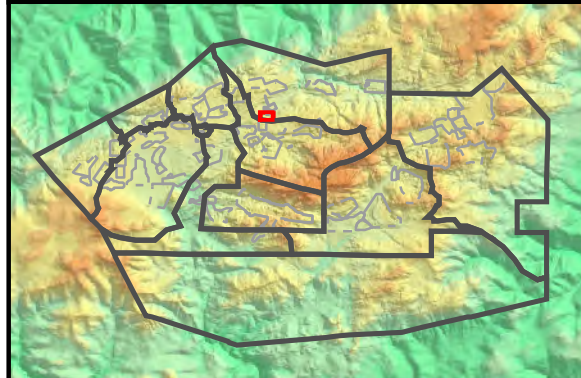
Result(s) Greater than SRGs

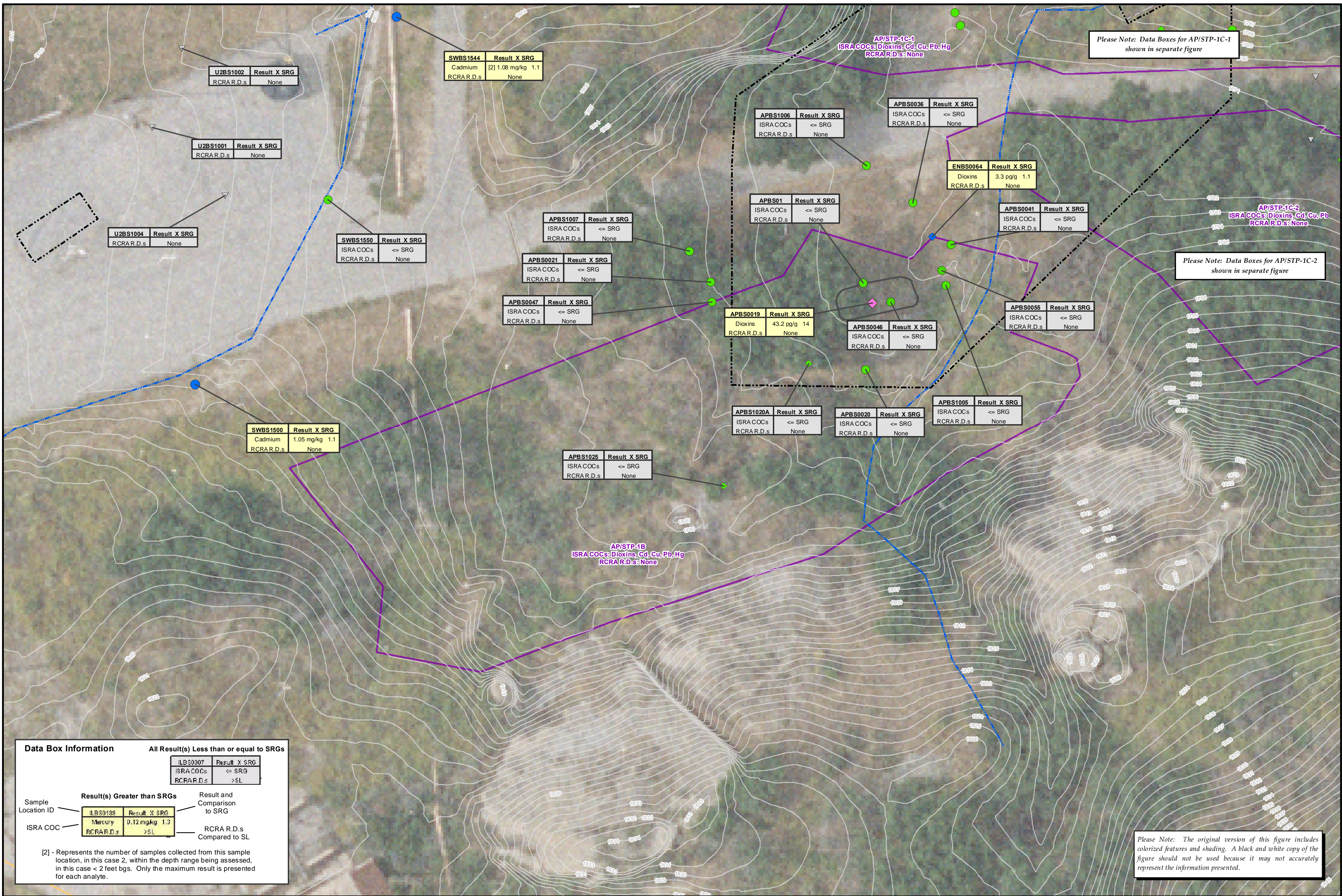
ILBS0138	Result X SRG
Mercury	0.12 mg/kg 1.3
RCRA R.D.s	>SL

Result and Comparison to SRG

RCRA R.D.s Compared to SL

[2] - Represents the number of samples collected from this sample location, in this case 2, within the depth range being assessed, in this case < 2 feet bgs. Only the maximum result is presented for each analyte.





**Data Box Information**

All Result(s) Less than or equal to SRGs

ILBS0307	Result X SRG
ISRA COCs	<= SRG
RCRA R.D.s	>SL

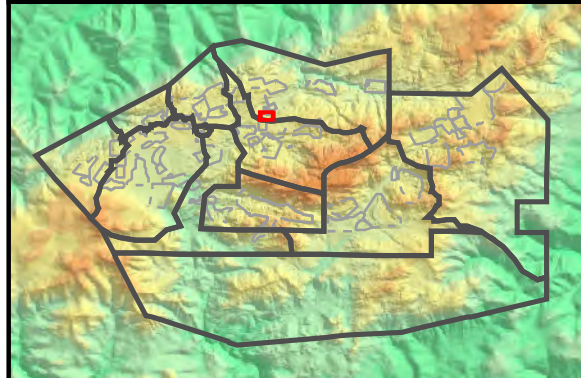
Result(s) Greater than SRGs

ILBS0138	Result X SRG
Mercury	0.12 mg/kg 1.3
RCRA R.D.s	>SL

Result and Comparison to SRG

RCRA R.D.s Compared to SL

[2] - Represents the number of samples collected from this sample location, in this case 2, within the depth range being assessed, in this case < 2 feet bgs. Only the maximum result is presented for each analyte.



- Base Map Legend**
- Administrative Area Boundary
  - RFI Site Boundary
  - Report Group Boundary
  - Leach Field
  - Drainage
  - Non Jurisdictional Surface Water Pathway
  - Surface Water Divide
  - Previous Excavation Area
  - Elevation Contour

- Figure Legend**
- ISRA Planned Excavation
  - Near Surface Well
  - Chatsworth Well

- ISRA Constituents of Concern**  
Cadmium, Copper, Lead, Mercury, Dioxin
- Soil Remediation Goals (SRGs)**  
Cadmium: 1 mg/kg  
Copper: 29 mg/kg  
Lead: 34 mg/kg  
Mercury: 0.09 mg/kg  
Dioxin: 3.0 pg/g
- RCRA R.D.s = RCRA Risk Drivers**  
SL = Screening Level
- Notes:**  
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD-TEQ.  
2. Cadmium, copper, lead, and mercury SRG is equal to the 2005 background comparison concentration, and SRG for dioxins is approximately 3 times the 2005 background comparison concentration.  
3. Screening level for RCRA risk drivers is the lower of the Ecological or Residential Risk-Based Screening Level. All RCRA risk drivers identified on this figure view are evaluated at each sample location shown.  
4. Aerial imagery and topographic contours from Sage, 2010. Aerial imagery was collected June 2, 2010, and represents pre-excavation conditions. Topographic contours represent pre-excavation conditions.

- Chemical Data Legend**
- Cadmium, Copper, Lead, and/or Mercury Sample Locations**
- <= SRG
  - > SRG and <= 2x SRG
  - > 2x SRG and <= 10x SRG
  - > 10x SRG
- Dioxin Sample Locations**
- <= SRG
  - > SRG and <= 2x SRG
  - > 2x SRG and <= 10x SRG
  - > 10x SRG
- Sample Not Analyzed for ISRA COCs**
- > SL for one or more RCRA R.D.s
  - <= SL for all RCRA R.D.s
  - Not analyzed for RCRA R.D.s

**Outfall 009 – ISRA Area AP/STP-1B  
Pre-Excavation Sample Results  
SubSurface Soils (2-10 feet bgs)  
SANTA SUSANA FIELD LABORATORY**

Path: T:\project\rock3\ISRA\Figures\NASA\AP-STP-1B\APSTP-1B\_PreExcav\_Deep.mxd Date: 12/26/2013

1 inch = 20 feet

0 20 40 Feet

**MWH**

**Figure E-2.2**



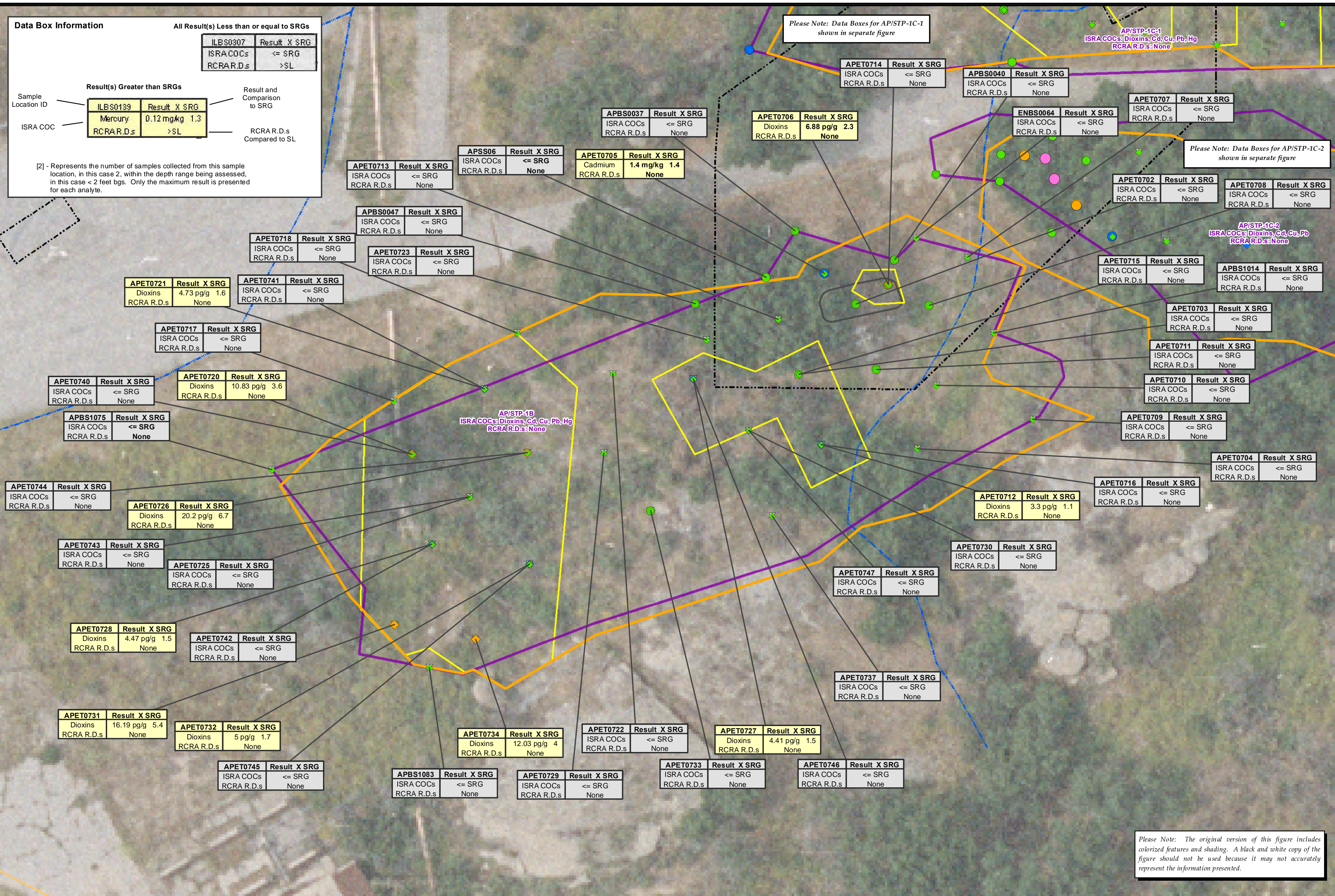


**TABLE E-2.1**  
**AP/STP-1B PRE-EXCAVATION SAMPLE RESULTS - PHASE III ISRA IMPLEMENTATION**  
**THE BOEING COMPANY**  
**SANTA SUSANA FIELD LABORATORY**

Table E-2.1

					Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Metals	Dioxins		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	TCDD TEQ	
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pg/g
<b>Background</b>					8.7	15	140	1.1	1	36.8	21	29	34	0.09	5.3	29	0.655	0.79	0.46	62	110	0.87	
<b>ISRA SRG</b>					--	--	--	--	1	--	--	29	34	0.09	--	--	--	--	--	--	--	3	
<b>CMS</b>					0.77	--	--	--	--	--	--	8.2	--	0.88	--	15	--	96	--	--	26	--	
<b>Lowest Characterization RBSL</b>					0.095	0.095	15	5.1	0.021	930	8.9	1.1	0.063	0.1	0.11	0.1	0.17	0.54	2.9	1.5	21	4.27	
<b>RBSL Type</b>					ECO	RES	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO	ECO
Object Name	Sample Name	Collection Date	Sample Depth (feet bgs)	ISRA Area	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	
SWBS1500	SWBS1500S001	1/29/2009	4.5-5.0	--	0.825	3.8	71.5	0.617	1.05	17	5.49	7.87	5.16	0.00769	0.418	10.1	5.27	1.05	0.133	30.7	51.5	--	
SWBS1544	SWBS1544S001	1/28/2009	2.8-3.3	--	0.948	3.49	102	0.795	1.08	18.1	6.37	8.61	5.76	0.00565	0.522	11.3	5.4	1.08	0.217	33.7	53.2	--	
SWBS1544	SWBS1544S002	1/28/2009	7.0-7.5	--	0.705	3.6	65.5	0.71	1.05	17.5	3.52	5.9	4.35	0.00467	0.251	7.62	5.27	1.05	0.13	29.8	41.5	--	
SWBS1550	SWBS1550S001	1/29/2009	4.0-4.5	--	0.825	3.54	88.6	0.444	0.144	19.2	5.11	7.45	6.12	0.00764	1.22	10.3	5.34	1.07	0.164	33.9	43	--	





**Data Box Information**

**All Result(s) Less than or equal to SRGs**

ILBS0307	Result X SRG
ISRA COCs	<= SRG
RCRA R.D.s	>SL

**Result(s) Greater than SRGs**

Sample Location ID	ILBS0139	Result X SRG
ISRA COC	Mercury	0.12 mg/kg 1.3
	RCRA R.D.s	>SL

Result and Comparison to SRG

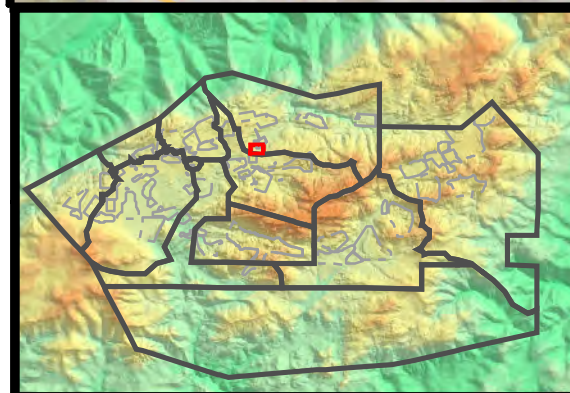
RCRA R.D.s Compared to SL

[2] - Represents the number of samples collected from this sample location, in this case 2, within the depth range being assessed, in this case < 2 feet bgs. Only the maximum result is presented for each analyte.

Please Note: Data Boxes for AP/STP-1C-1 shown in separate figure

Please Note: Data Boxes for AP/STP-1C-2 shown in separate figure

Please Note: The original version of this figure includes colorized features and shading. A black and white copy of the figure should not be used because it may not accurately represent the information presented.



**Base Map Legend**

- Administrative Area Boundary
- RFI Site Boundary
- Report Group Boundary
- Drainage
- Non Jurisdictional Surface Water Pathway
- Surface Water Divide
- Previous Excavation Area

**Figure Legend**

- ISRA Planned Excavation
- ISRA Actual Excavation
- Additional Excavation Area
- Near Surface Well
- Chatsworth Well

**ISRA Constituents of Concern**  
Cadmium, Copper, Lead, Mercury, Dioxin

**Soil Remediation Goals (SRGs)**  
Cadmium: 1 mg/kg  
Copper: 29 mg/kg  
Lead: 34 mg/kg  
Mercury: 0.09 mg/kg  
Dioxin: 3.0 pg/g

RCRA R.D.s = RCRA Risk Drivers  
SL = Screening Level

**Cadmium, Copper, Lead, and/or Mercury Sample Locations**

- <= SRG
- > SRG and <= 2x SRG
- > 2x SRG and <= 10x SRG
- > 10x SRG

**Chemical Data Legend**

**Dioxin Sample Locations**

- <= SRG
- > SRG and <= 2x SRG
- > 2x SRG and <= 10x SRG
- > 10x SRG

**Sample Not Analyzed for ISRA COCs**

- > SL for one or more RCRA R.D.s
- <= SL for all RCRA R.D.s
- Not analyzed for RCRA R.D.s

**Outfall 009 – ISRA Area AP/STP-1B Confirmation Sample Results**

**SANTA SUSANA FIELD LABORATORY**

Path: T:\projects\rock3\ISRA\Figures\NASAIAP-STP-1B\APSTP-1B\_Confirm.mxd Date: 12/18/2013

1 inch = 20 feet

0 20 40 Feet

**MWH**

**Figure E-2.3**

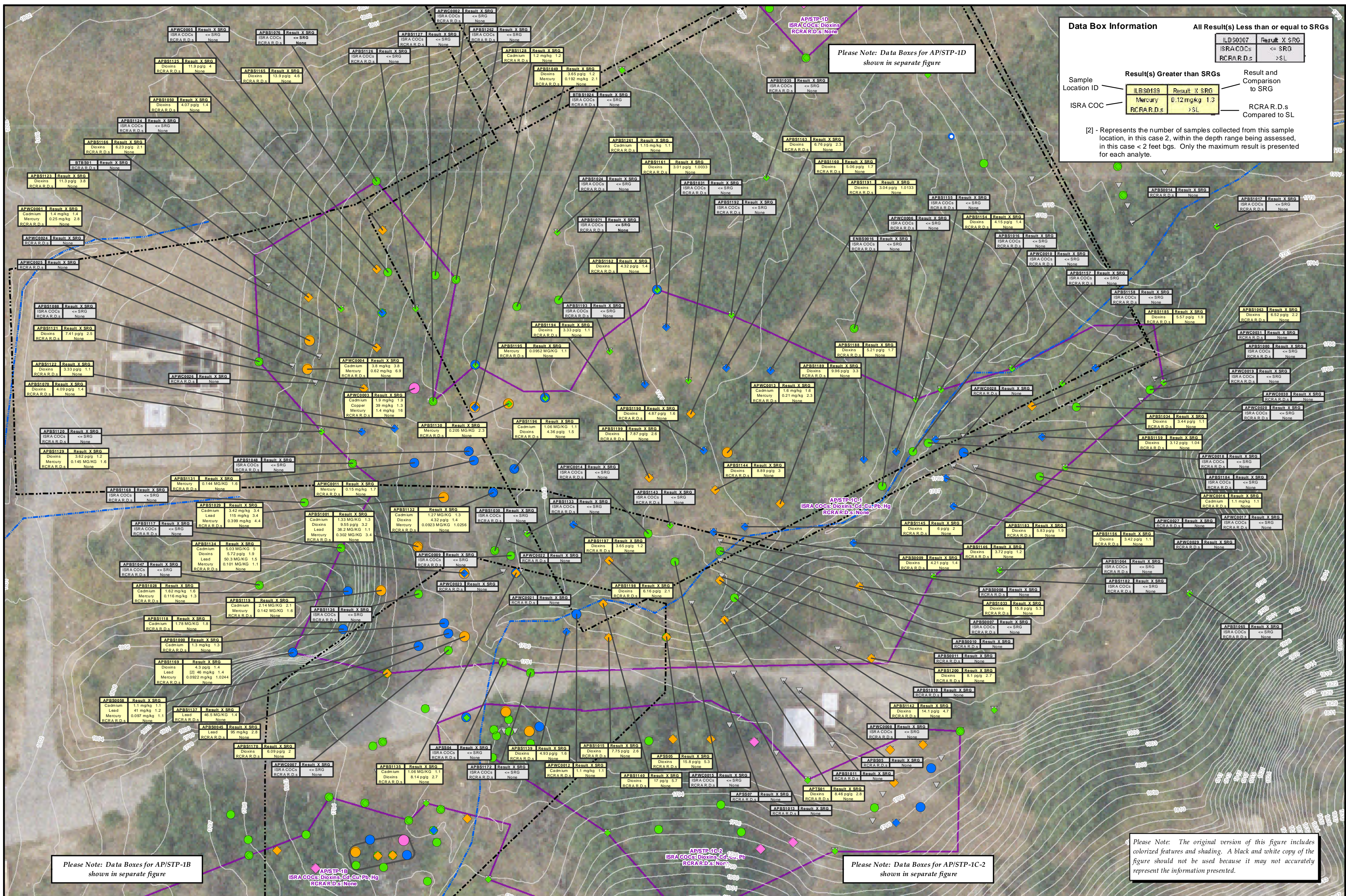
Notes:  
1. Dioxin represents the sum of 17 dioxin/furan congeners results adjusted for toxicity, normalized to 2,3,7,8-TCDD-TEQ.  
2. Cadmium, copper, lead, and mercury SRG is equal to the 2005 background comparison concentration, and SRG for dioxins is approximately 3 times the 2005 background comparison concentration.  
3. Screening level for RCRA risk drivers is the lower of the Ecological or Residential Risk-Based Screening Level. All RCRA risk drivers identified on this figure view are evaluated at each sample location shown.  
4. Aerial imagery was collected June 2, 2010, and represents pre-excavation conditions (Sage, 2010).  
5. The actual ISRA excavation boundary was surveyed by Cal Vada on 10/10/2012 and 1/30/2013.

**TABLE E-2.2**  
**AP/STP-1B CONFIRMATION SAMPLE RESULTS - PHASE III ISRA IMPLEMENTATION**  
**THE BOEING COMPANY**  
**SANTA SUSANA FIELD LABORATORY**

<b>Group</b>						<b>Metals</b>	<b>Metals</b>	<b>Metals</b>	<b>Metals</b>	<b>Dioxins</b>
<b>Preferred Analyte</b>						<b>Cadmium</b>	<b>Copper</b>	<b>Lead</b>	<b>Mercury</b>	<b>TCDD TEQ</b>
<b>Result Value Units</b>						<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>pg/g</b>
<b>Background</b>						<b>1</b>	<b>29</b>	<b>34</b>	<b>0.09</b>	<b>0.87</b>
<b>ISRA SRG</b>						<b>1</b>	<b>29</b>	<b>34</b>	<b>0.09</b>	<b>3</b>
<b>CMS</b>						<b>--</b>	<b>8.2</b>	<b>--</b>	<b>0.88</b>	<b>--</b>
<b>Lowest Characterization RBSL</b>						<b>0.021</b>	<b>1.1</b>	<b>0.063</b>	<b>0.1</b>	<b>4.27</b>
<b>RBSL Type</b>						<b>ECO</b>	<b>ECO</b>	<b>ECO</b>	<b>ECO</b>	<b>ECO</b>
<b>Object Name</b>	<b>Sample Name</b>	<b>Sample Date</b>	<b>Sample Depth (feet bgs)</b>	<b>Sample Status</b>	<b>Floor/Sidewall</b>	<b>RESULTS</b>	<b>RESULTS</b>	<b>RESULTS</b>	<b>RESULTS</b>	<b>RESULTS</b>
APBS0037	APBS0037S01	12/14/2006	0.3-0.8	In Place	Sidewall	0.28	12 J	12	0.011	0.692
APBS0040	APBS0040S01	12/14/2006	0.5-1.0	Excavated	Sidewall	0.21	9.6 J	8.4	<0.021	2.54
APBS0047	APBS0047S01	2/27/2007	0.5-1.0	Excavated	Sidewall	0.058	8.1 J	4.7 J	<0.018 J	0.139
APBS1014	APBS1014S01	6/3/2008	0.0-1.0	Excavated	Sidewall	--	--	--	--	1.25
APBS1075	APBS1075S001	6/17/2009	0.0-0.0	In Place	Sidewall	--	--	--	--	1.14
APBS1083	APBS1083S001	2/8/2010	0.0-0.5	In Place	Sidewall	--	--	--	--	0.965
APET0702	APET0702S001	11/29/2011	2.0-2.5	In Place	Floor	0.219 J	10.3 J	5.39 J	<0.0071 J	1.03
APET0702	APET0702S001-RWQCB	11/29/2011	2.0-2.5	In Place	Floor	0.20	10	5.0	<0.0100	3.48
APET0703	APET0703S001	11/29/2011	1.0-1.5	Excavated	Floor	0.316 J	12.2 J	7.6 J	<0.0071 J	2.84
APET0703	APET0703S001-RWQCB	11/29/2011	1.0-1.5	Excavated	Floor	1.8	12	8.1	0.0147	4.12
APET0704	APET0704S001	11/29/2011	1.0-1.5	In Place	Floor	--	--	--	--	0.3
APET0704	APET0704S001-RWQCB	11/29/2011	1.0-1.5	In Place	Floor	--	--	--	--	2.40
APET0705	APET0705S001	11/29/2011	2.0-2.5	In Place	Floor	0.803 J	11.9 J	9.37 J	<0.0078 J	1.45
APET0705	APET0705S001SP	11/29/2011	2.0-2.5	In Place	Floor	1.4	8.6	8.5	--	0.90
APET0706	APET0706S001	11/29/2011	2.0-2.5	Excavated	Floor	0.289 J	15.5 J	8.6 J	<0.0072 J	6.88
APET0707	APET0707S001	11/29/2011	2.0-2.5	In Place	Floor	--	--	--	--	0.3
APET0708	APET0708S001	11/29/2011	2.0-2.5	In Place	Floor	0.451 J	22.4 J	13.8 J	<0.007 J	1.3
APET0709	APET0709S001	11/29/2011	1.0-1.5	In Place	Floor	--	--	--	--	0.61
APET0710	APET0710S001	11/29/2011	1.0-1.5	In Place	Floor	--	--	--	--	1.71
APET0711	APET0711S001	11/29/2011	1.0-1.5	In Place	Floor	0.296 J	14.2 J	7.86 J	<0.0069 J	0.19
APET0712	APET0712S001	11/29/2011	1.0-1.5	Excavated	Floor	--	--	--	--	3.3
APET0713	APET0713S001	11/29/2011	1.0-1.5	In Place	Floor	--	--	--	--	0.19
APET0714	APET0714S001	10/1/2012	3.0-3.5	In Place	Floor	--	--	--	--	0.12
APET0714	APET0714S001-RWQCB	10/1/2012	3.0-3.5	In Place	Floor	--	--	--	--	0.06
APET0715	APET0715S001	10/1/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.005
APET0716	APET0716S001	10/1/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.15
APET0717	APET0717S001	10/8/2012	1.0-1.5	In Place	Sidewall	--	--	--	--	0.53
APET0717	APET0717S001-RWQCB	10/8/2012	1.0-1.5	In Place	Sidewall	--	--	--	--	1.00
APET0718	APET0718S001	10/8/2012	0.5-1.0	In Place	Sidewall	--	--	--	--	0.148
APET0718	APET0718S001SP	10/8/2012	0.5-1.0	In Place	Sidewall	--	--	--	--	0.08
APET0720	APET0720S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	10.83
APET0721	APET0721S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	4.73
APET0722	APET0722D001	10/8/2012	1.0-1.5	In Place	Floor	--	--	--	--	1.10
APET0722	APET0722S001	10/8/2012	1.0-1.5	In Place	Floor	--	--	--	--	1.04
APET0723	APET0723S001	10/8/2012	1.0-1.5	In Place	Floor	--	--	--	--	1.46
APET0725	APET0725S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	2.13
APET0725	APET0725S001-RWQCB	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	1.97
APET0726	APET0726S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	20.2

**TABLE E-2.2**  
**AP/STP-1B CONFIRMATION SAMPLE RESULTS - PHASE III ISRA IMPLEMENTATION**  
**THE BOEING COMPANY**  
**SANTA SUSANA FIELD LABORATORY**

<b>Group</b>						<b>Metals</b>	<b>Metals</b>	<b>Metals</b>	<b>Metals</b>	<b>Dioxins</b>
<b>Preferred Analyte</b>						<b>Cadmium</b>	<b>Copper</b>	<b>Lead</b>	<b>Mercury</b>	<b>TCDD TEQ</b>
<b>Result Value Units</b>						<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>pg/g</b>
<b>Background</b>						<b>1</b>	<b>29</b>	<b>34</b>	<b>0.09</b>	<b>0.87</b>
<b>ISRA SRG</b>						<b>1</b>	<b>29</b>	<b>34</b>	<b>0.09</b>	<b>3</b>
<b>CMS</b>						--	<b>8.2</b>	--	<b>0.88</b>	--
<b>Lowest Characterization RBSL</b>						<b>0.021</b>	<b>1.1</b>	<b>0.063</b>	<b>0.1</b>	<b>4.27</b>
<b>RBSL Type</b>						<b>ECO</b>	<b>ECO</b>	<b>ECO</b>	<b>ECO</b>	<b>ECO</b>
<b>Object Name</b>	<b>Sample Name</b>	<b>Sample Date</b>	<b>Sample Depth (feet bgs)</b>	<b>Sample Status</b>	<b>Floor/Sidewall</b>	<b>RESULTS</b>	<b>RESULTS</b>	<b>RESULTS</b>	<b>RESULTS</b>	<b>RESULTS</b>
APET0727	APET0727S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	4.41
APET0727	APET0727S001-RWQCB	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	4.25
APET0728	APET0728S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	4.47
APET0729	APET0729S001	10/8/2012	1.0-1.5	In Place	Floor	--	--	--	--	1.68
APET0730	APET0730S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	1.78
APET0731	APET0731S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	16.19
APET0732	APET0732S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	5.00
APET0733	APET0733S001	10/8/2012	2.0-2.5	In Place	Floor	0.229	11.8	5.84	--	0.17
APET0733	APET0733S001-RWQCB	10/8/2012	2.0-2.5	In Place	Floor	0.20	8.4	3.9	--	0.089
APET0734	APET0734S001	10/8/2012	1.0-1.5	Excavated	Floor	--	--	--	--	12.03
APET0737	APET0737S001	10/8/2012	1.0-1.5	In Place	Floor	--	--	--	--	0.70
APET0740	APET0740S001	11/8/2012	3.0-3.5	In Place	Floor	--	--	--	--	0.025
APET0741	APET0741S001	11/8/2012	3.0-3.5	In Place	Floor	--	--	--	--	0.27
APET0742	APET0742S001	11/8/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.01
APET0743	APET0743S001	11/8/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.38
APET0744	APET0744S001	11/8/2012	3.0-3.5	In Place	Floor	--	--	--	--	0.24
APET0745	APET0745S001	11/8/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.66
APET0746	APET0746S001	11/8/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.15
APET0747	APET0747S001	11/8/2012	2.0-2.5	In Place	Floor	--	--	--	--	0.17
APSS06	RS543	12/11/1997	0.0-0.0	In Place	Sidewall	<1	10	9	<0.2	--
ENBS0064	ENBS0064S001	9/10/2008	0.5-1.0	Excavated	Sidewall	--	--	--	--	0.0994



**Data Box Information**

All Result(s) Less than or equal to SRGs

ILB50307	Result X SRG
ISRA COCs	<= SRG
RCRAR.D.s	>SL

Sample Location ID: ILB50139  
ISRA COC: Mercury  
RCRAR.D.s: 0.12 mg/kg  
Result X SRG: >SL

Result(s) Greater than SRGs

Result and Comparison to SRG: RCRAR.D.s Compared to SL

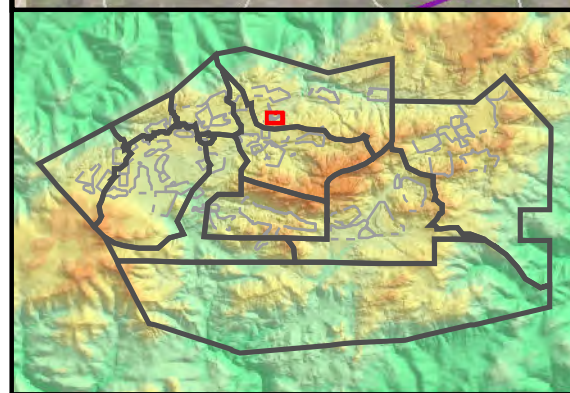
[2] - Represents the number of samples collected from this sample location, in this case 2, within the depth range being assessed, in this case < 2 feet bgs. Only the maximum result is presented for each analyte.

Please Note: Data Boxes for AP/STP-1D shown in separate figure

Please Note: Data Boxes for AP/STP-1B shown in separate figure

Please Note: Data Boxes for AP/STP-1C-2 shown in separate figure

Please Note: The original version of this figure includes colored features and shading. A black and white copy of the figure should not be used because it may not accurately represent the information presented.



**Base Map Legend**

- Administrative Area Boundary
- RFI Site Boundary
- Report Group Boundary
- Drainage
- Non Jurisdictional Surface Water Pathway
- Surface Water Divide
- Previous Excavation Area
- Elevation Contour

**Figure Legend**

- ISRA Planned Excavation
- Near Surface Well
- Chatsworth Well

**ISRA Constituents of Concern**  
Cadmium, Copper, Lead, Mercury, Dioxin

**Soil Remediation Goals (SRGs)**  
Cadmium: 1 mg/kg  
Copper: 29 mg/kg  
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Mercury: 0.09 mg/kg  
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**RCRAR.D.s = RCRA Risk Drivers**  
SL = Screening Level

**Notes:**  
1. Dioxin represents the sum of 17 dioxin/furan congeners results adjusted for toxicity, normalized to 2,3,7,8-TCDD-TEQ.  
2. Cadmium, copper, lead, and mercury SRG is equal to the 2005 background comparison concentration, and SRG for dioxin is approximately 3 times the 2005 background comparison concentration.  
3. Screening levels for RCRA risk drivers is the lower of the Ecological or Residential Risk-Based Screening Level. All RCRA risk drivers identified on this figure were evaluated at each sample location shown.  
4. Aerial imagery and topographic contours from Sage, 2010. Aerial imagery was collected June 2, 2010, and represents pre-excavation conditions. Topographic contours represent pre-excavation conditions.

**Chemical Data Legend**

**Cadmium, Copper, Lead, and/or Mercury Sample Locations**

- <= SRG
- > SRG and <= 2x SRG
- > 2x SRG and <= 10x SRG
- > 10x SRG

**Dioxin Sample Locations**

- <= SRG
- > SRG and <= 2x SRG
- > 2x SRG and <= 10x SRG
- > 10x SRG

**Sample Not Analyzed for ISRA COCs**

- > SL for one or more RCRAR.D.s
- <= SL for all RCRAR.D.s
- Not analyzed for RCRAR.D.s

**Outfall 009 - ISRA Area AP/STP-1C-1**  
**Pre-Excavation Sample Results**  
**Surface Soils (0 - 2 feet bgs)**  
**SANTA SUSANA FIELD LABORATORY**

Path: T:\project\rock3\ISRA\Figures\NASA\AP-STP-1C-1\AP-STP-1C-1\_PreExcav\_Shallow.mxd Date: 12/18/2013

1 inch = 25 feet

0 25 50 Feet

**MWH**

**Figure E-3.1**