Outfall 008, HVS-2A
Pre-Excavation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Previously Excavated Area
- Potential Local Borrow Source
- Preliminary ISRA Evaluation Area
- Surface Water Divide
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Elevation Contour
- Sample On Hold

ISRA Constituents of Concern
Copper, Lead, Dioxins

2005 Background Comparison Concentrations
Copper: 29 mg/kg
Lead: 34 mg/kg
Dioxins (TCDD TEQ): 0.87 pg/g

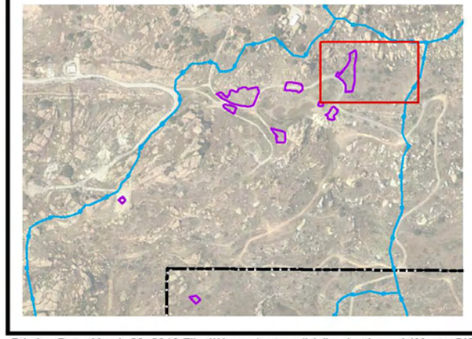
Copper and/or Lead Sample Location (<7 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG

Dioxin Sample Location (<2 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG
- ≥100x BG

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD TEQ
2. Extent of local borrow source generalized and approximate. Actual extent will vary base on final excavation extents, as directed by project engineer.
3. Sample IDs shown represent ISRA data gap, ISRA waste characterization and RCRA RFI samples located in the vicinity of the ISRA area.
4. Aerial imagery from Google Earth, 2007.
5. Topographic contours from Sage, July 2009.

Date: August 24, 2009

0 20 40 80 Feet



HZBS0004 HZBS0077 HZBS0140 HZBS0142 HZBS0162 HZBS0163 HZBS0141 HZBS0078 54 mg/kg 1.6 x BG HZBS0143 HZBS0150 HZBS0075 ISWC0082 ISWC0083 HZBS0164 HZBS0076 HZBS0079 HZBS0139 HVBF34 7.1 mg/kg 2.1 x BG HZBS0160 HZBS0080 HZBS0074 HZBS0137 HZBS0138 51 mg/kg 1.5 x BG ISWC0081 HZBS0159 HZBS0136 ISWC0080 HZBS0175 HZBS0123 HZBS0184 ISWC0079 HZBS0174 HZBS0173 HZBS0135 ISWC0078 HZBS0133 41 mg/kg 1.15 x BG ISWC0028 HVBF33 HZBS0178 HZBS0185 HZBS0183 HZBS0073 HZBS0096 HZBS0028 44 mg/kg 1.3 x BG HZBS0177 HZBS0097 HZBS0134 49 mg/kg 1.4 x BG HZBS0132 HZBS0081 HZBS0158 HVS-2D ISWC0077 HVBS33 40 mg/kg 1.18 x BG HZBS0082 HZBS0131 39 mg/kg 1.15 x BG HZBS0180 HZBS0181 HZBS0182 HZBS0085 Pb: 42 mg/kg 1.23 x BG Dioxins: 2.96 pg/g 3.4 x BG HZBS0161 HZBS0029 HZBS0179 HZBS0124 HZBS0172 HZBS0130 HZBS0171 HZBS0086 HZBS0129 HZBS0144 HZBS0084 HZBS0168 ISWC0085 HZBS0092 HZBS0093 HZBS0165 HZBS0148 HZBS0167 HZBS0087 HVS-2B-2

HVS-2A
Lead

SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-5.1

Printing Date: March 29, 2010 File: \\Uspas1netapp1\dei\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall008\ConfirmationFigs\Final\008 ISRA_HVS-2A_ConfirmationSamplesFinal.mxd

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HVBF33**	**HVBF33**	**HVBF33**	**HVBF33**	**HVBF34**	**HVBF34**	**HVBF34**	**HVBF34**	**HVBS33**
				Sample Name:		HVBF33S01	HVBF33S02	HVBF33AS01	HVBF33AS02	HVBF34S01	HVBF34S02	HVBF34S03	HVBF34S04	RS520
				Collection Date:		10/4/2006	10/4/2006	10/1/2009	10/1/2009	10/4/2006	10/4/2006	10/4/2006	10/4/2006	12/9/1997
				Sample Depth (feet bgs):		0.0 - 0.5	2.0 - 3.0	0.0 - 0.5	3.0 - 3.5	0.0 - 1.0	4.0 - 5.0	9.0 - 10.0	12.0 - 12.0	0.0 - 0.5
				Status:		In Place	In Place	In Place	In Place	Excavated	Excavated	In Place	In Place	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS														
Aluminum	mg/kg	20,000	--	--	--	26,300	15,000	13,600 J	12,000 J	16,700	15,000	16,000	12,000	9,500
Antimony	mg/kg	10	--	--	--	<1.1 J	0.17	--	--	<1 J	0.11	0.081	0.048	<12 J
Arsenic	mg/kg	15	--	--	--	4.7	6.7	--	--	3.4	3.4	3.8	3.1	<6
Barium	mg/kg	140	--	--	--	82	44	--	--	59	66	39	23 J	74
Beryllium	mg/kg	1.1	--	--	--	0.73	0.65	--	--	0.52	0.65	0.59	0.4	<0.6
Boron	mg/kg	9.7	--	--	--	5.5	13	2.01 J	<1.01	4.48	9.1	10	9.7	--
Cadmium	mg/kg	1	--	--	--	0.082 J	<0.026	--	--	0.089 J	0.032 J	<0.028	0.044 J	<1
Chromium	mg/kg	36.8	--	--	--	15	16	--	--	14	11	13	12	14
Cobalt	mg/kg	21	--	--	--	5.9	6.3	--	--	4.1	4.2	2.9	2.1	6
Copper	mg/kg	29	29	--	--	7.1 J	8.5 J	--	--	6.4 J	4.8J	5 J	2.8 J	10
Lead	mg/kg	34	34	--	--	7.4	5.9 J	--	--	71	4.7 J	5.3 J	4 J	40
Mercury	mg/kg	0.09	--	--	--	0.025	0.01	--	--	0.013	0.012	<0.0088	<0.0088	<0.2
Molybdenum	mg/kg	5.3	--	--	--	0.69	0.44	--	--	0.47	0.48	0.4	0.3	<12
Nickel	mg/kg	29	--	--	--	9.3 J	9.8 J	--	--	7.6 J	7 J	6.7 J	4.3 J	12
Selenium	mg/kg	0.655	--	--	--	0.29	<0.21	--	--	<0.2	<0.21	<0.22	<0.22	<6
Silver	mg/kg	0.79	--	--	--	0.11	<0.053	--	--	0.051 J	<0.054	0.063	<0.054	<1
Thallium	mg/kg	0.46	--	--	--	0.27 J	0.22 J	--	--	0.22 J	0.17 J	0.14 J	<0.11	<6
Vanadium	mg/kg	62	--	--	--	29	30	--	--	25	24	27	24	28
Zinc	mg/kg	110	--	--	--	37 J	36 J	--	--	37 J	34 J	34 J	26 J	48
ASBESTOS														
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs														
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	<0.00340	<0.00349	--	--	--	--	--
DIOXINS														
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	0.04586	0.0278	--	--	--	--	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HVBS33**	**HZBS0028**	**HZBS0029**	**HZBS0029**	**HZBS0072**	**HZBS0073**	**HZBS0073A**	**HZBS0074**
				Sample Name:		RS649	HZBS0028S001	HZBS0029S001	HZBS0029S002	HZBS0072S001	HZBS0073S001	HZBS0073AS002	HZBS0074S001
				Collection Date:		1/23/1997	7/18/2008	7/18/2008	7/18/2008	2/25/2009	2/24/2009	3/20/2009	2/25/2009
				Sample Depth (feet bgs):		5.0 - 5.0	0.5 - 1.0	0.5 - 1.0	4.5 - 5.0	0.0 - 0.5	0.0 - 0.5	1.9 - 2.4	0.0 - 0.5
				Status:		In Place	Excavated	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Aluminum	mg/kg	20,000	--	--	--	--	11,600 J	14,900 J	10,600 J	--	--	--	--
Antimony	mg/kg	10	--	--	--	--	0.37 J	0.37 J	<0.323 J	--	--	--	--
Arsenic	mg/kg	15	--	--	--	--	4.6 J	4.3 J	1.7 J	--	--	--	--
Barium	mg/kg	140	--	--	--	--	70.7	92.9	42.5	--	--	--	--
Beryllium	mg/kg	1.1	--	--	--	--	0.57	0.85	0.42	--	--	--	--
Boron	mg/kg	9.7	--	--	--	--	2.7 J	2.9 J	1.7 J	--	--	--	--
Cadmium	mg/kg	1	--	--	--	--	0.39	0.15 J	0.062 J	0.096 J	--	--	--
Chromium	mg/kg	36.8	--	--	--	--	16.1	21.1	14.8	--	--	--	--
Cobalt	mg/kg	21	--	--	--	--	4.9 J	6.6 J	2.1 J	--	--	--	--
Copper	mg/kg	29	29	--	--	--	9.4 J	10.9 J	7.7 J	--	--	--	--
Lead	mg/kg	34	34	--	--	<6	44.1 J	10.3 J	5.4 J	7.2	8.3	--	8.9
Mercury	mg/kg	0.09	--	--	--	--	0.018	0.0076 J	0.0045 J	--	--	--	--
Molybdenum	mg/kg	5.3	--	--	--	--	0.49 J	0.58 J	<0.12 J	--	--	--	--
Nickel	mg/kg	29	--	--	--	--	10.7 J	14.3 J	6.3 J	--	--	--	--
Selenium	mg/kg	0.655	--	--	--	--	<0.506 J	<0.5 J	<0.528 J	--	--	--	--
Silver	mg/kg	0.79	--	--	--	--	0.11 J	0.071 J	0.052 J	--	--	--	--
Thallium	mg/kg	0.46	--	--	--	--	0.28	0.31	<0.24	--	--	--	--
Vanadium	mg/kg	62	--	--	--	--	32.5	37.4	24.9	--	--	--	--
Zinc	mg/kg	110	--	--	--	--	55.8	53.5	34.4	54.1	--	--	--
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
DIOXINS													
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	0.1750	0.1903	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0076**	**HZBS0077**	**HZBS0078**	**HZBS0079**	**HZBS0079A**	**HZBS0080**	**HZBS0080**
				Sample Name:		HZBS0076S001	HZBS0077S001	HZBS0078S001	HZBS0079S001	HZBS0079AS002	HZBS0080S001	HZBS0080AS001
				Collection Date:		2/25/2009	2/25/2009	2/25/2009	2/24/2009	3/20/2009	2/25/2009	10/1/2009
				Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	1.5 - 2.0	0.0 - 0.5	0.0 - 0.5
				Status:		In Place	In Place	Excavated	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--	--	11,300
Antimony	mg/kg	10	--	--	--	--	--	--	--	--	--	1.49 J
Arsenic	mg/kg	15	--	--	--	--	--	--	--	--	--	5.73
Barium	mg/kg	140	--	--	--	--	--	--	--	--	--	92.3
Beryllium	mg/kg	1.1	--	--	--	--	--	--	--	--	--	0.819
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--	--	3.52 J
Cadmium	mg/kg	1	--	--	--	--	--	--	--	--	--	0.234
Chromium	mg/kg	36.8	--	--	--	--	--	--	--	--	--	21.5
Cobalt	mg/kg	21	--	--	--	--	--	--	--	--	--	5.86
Copper	mg/kg	29	29	--	--	--	--	--	--	--	0.404	10.1
Lead	mg/kg	34	34	--	--	11.1	13.9	53.6	16.2	--	23.2	15.4
Mercury	mg/kg	0.09	--	--	--	--	--	--	--	--	--	0.0159 J
Molybdenum	mg/kg	5.3	--	--	--	--	--	--	--	--	--	0.441
Nickel	mg/kg	29	--	--	--	--	--	--	--	--	--	13.9
Selenium	mg/kg	0.655	--	--	--	--	--	--	--	--	--	<0.503
Silver	mg/kg	0.79	--	--	--	--	--	--	--	--	--	0.0751 J
Thallium	mg/kg	0.46	--	--	--	--	--	--	--	--	--	0.397
Vanadium	mg/kg	62	--	--	--	--	--	--	--	--	--	37.9
Zinc	mg/kg	110	--	--	--	--	--	--	--	--	--	58.7
ASBESTOS												
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--
PCBs												
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	<0.00343
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	<0.00343
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	<0.00343
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	<0.00343
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	<0.00343
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	<0.00343
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	<0.00343
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	--	0.3365	--	0.2308	0.0118	0.2585	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0080**	**HZBS0081**	**HZBS0081**	**HZBS0081**	**HZBS0082**	**HZBS0082**	**HZBS0082**
				Sample Name:		HZBS0080AS002	HZBS0081S001	HZBS0081AS001	HZBS0081AS002	HZBS0082S001	HZBS0082S002	HZBS0082AS001
				Collection Date:		10/1/2009	2/25/2009	9/30/2009	9/30/2009	2/25/2009	2/25/2009	10/1/2009
				Sample Depth (feet bgs):		1.5 - 2.0	0.0 - 0.5	0.0 - 0.5	3.0 - 3.5	0.0 - 0.5	3.2 - 3.7	0.0 - 0.5
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	--	--	14,700	--	15,300	15,500	--	--	12,400
Antimony	mg/kg	10	--	--	--	<1.68	--	2.57 J	2.02 J	--	--	1.83 J
Arsenic	mg/kg	15	--	--	--	6.59	--	6.25 J	6.14 J	--	--	5.66
Barium	mg/kg	140	--	--	--	73	--	95.9 J	119 J	--	--	83.9
Beryllium	mg/kg	1.1	--	--	--	0.868	--	0.697 J	0.825 J	--	--	0.743
Boron	mg/kg	9.7	--	--	--	3.22 J	--	4.22 J	3.16 J	--	--	3.57 J
Cadmium	mg/kg	1	--	--	--	0.193 J	--	0.204	0.165 J	--	--	0.271
Chromium	mg/kg	36.8	--	--	--	23.1	--	21.2 J	21.7 J	--	--	17.5
Cobalt	mg/kg	21	--	--	--	4.73	--	6.87 J	6.96 J	--	--	5.92
Copper	mg/kg	29	29	--	--	11.9	14.6 J	11.6 J	11 J	<0.328	7.34 J	9.02
Lead	mg/kg	34	34	--	--	9.1	12.4	13.2 J	9.44 J	25.5	6.53	17.5
Mercury	mg/kg	0.09	--	--	--	0.0145 J	--	0.0131 J	<0.00396 J	--	--	0.011 J
Molybdenum	mg/kg	5.3	--	--	--	0.414	--	0.481	0.474	--	--	0.691
Nickel	mg/kg	29	--	--	--	13.7	--	15.3 J	15.1 J	--	--	12.9
Selenium	mg/kg	0.655	--	--	--	<0.522	--	<0.484	<0.518	--	--	<0.517
Silver	mg/kg	0.79	--	--	--	0.0808 J	--	0.0716 J	0.092 J	--	--	0.0797 J
Thallium	mg/kg	0.46	--	--	--	0.371	--	0.335	0.325	--	--	0.338
Vanadium	mg/kg	62	--	--	--	42.7	--	48.7 J	46.3 J	--	--	34.5
Zinc	mg/kg	110	--	--	--	59.9	--	70.2 J	63.8 J	--	--	54.5
ASBESTOS												
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--
PCBs												
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00349	--	<0.00339	<0.00352	--	--	<0.00344
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00349	--	<0.00339	<0.00352	--	--	<0.00344
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00349	--	<0.00339	<0.00352	--	--	<0.00344
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00349	--	<0.00339	<0.00352	--	--	<0.00344
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00349	--	<0.00339	<0.00352	--	--	<0.00344
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00349	--	0.00470 J	<0.00352	--	--	<0.00344
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00349	--	0.00290 J	<0.00352	--	--	<0.00344
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	0*	0.164	--	0*	0.399	0.0243	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0082**	**HZBS0084**	**HZBS0084**	**HZBS0084**	**HZBS0092**	**HZBS0097**	**HZBS0123**
				Sample Name:		HZBS0082AS002	HZBS0084S001	HZBS0084AS001	HZBS0084AS002	HZBS0092S001	HZBS0097S001	HZBS0123D001
				Collection Date:		10/1/2009	2/25/2009	10/1/2009	10/1/2009	2/25/2009	2/25/2009	6/1/2009
				Sample Depth (feet bgs):		3.0 - 3.5	0.0 - 0.5	0.0 - 0.5	2.5 - 3.0	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	--	--	13,200	--	10,900	14,300	--	--	--
Antimony	mg/kg	10	--	--	--	<1.62 J	--	<1.54 J	<1.50 J	--	--	--
Arsenic	mg/kg	15	--	--	--	5.52	--	5.29	4.92	2.1	--	--
Barium	mg/kg	140	--	--	--	83	--	96	61.4	--	--	--
Beryllium	mg/kg	1.1	--	--	--	0.764	--	0.0672	0.686	--	--	--
Boron	mg/kg	9.7	--	--	--	2.65 J	--	2.81 J	2.43 J	--	--	--
Cadmium	mg/kg	1	--	--	--	0.134 J	--	0.247	0.106 J	0.21 J	--	--
Chromium	mg/kg	36.8	--	--	--	16.9	--	17.1	17.5	--	--	--
Cobalt	mg/kg	21	--	--	--	5.82	--	6.07	3.81	--	--	--
Copper	mg/kg	29	29	--	--	8.01	1.32	8.94	6.59	6.1	--	11.1 J
Lead	mg/kg	34	34	--	--	8.2	15	13.5	7.76	21	13.9	16.3 J
Mercury	mg/kg	0.09	--	--	--	0.00718 J	--	0.0153 J	0.00783 J	--	--	--
Molybdenum	mg/kg	5.3	--	--	--	0.626	--	0.609	0.459	--	--	--
Nickel	mg/kg	29	--	--	--	10.8	--	12.4	8.22	--	--	--
Selenium	mg/kg	0.655	--	--	--	<0.5	--	<0.502	<0.5	--	--	--
Silver	mg/kg	0.79	--	--	--	0.0704 J	--	0.0827 J	0.0658 J	--	--	--
Thallium	mg/kg	0.46	--	--	--	0.228	--	0.307	0.203	--	--	--
Vanadium	mg/kg	62	--	--	--	34.3	--	33.4	35.3	--	--	--
Zinc	mg/kg	110	--	--	--	50.3	--	51.1	42.8	--	--	--
ASBESTOS												
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--
PCBs												
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00350	--	<0.00337	<0.00350	--	--	--
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	--	0.275	--	0.0321	--	--	0.178

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0123**	**HZBS0123**	**HZBS0123**	**HZBS0124**	**HZBS0124**	**HZBS0124**	**HZBS0124**
				Sample Name:		HZBS0123S001	HZBS0123AS001	HZBS0123AS002	HZBS0124S001	HZBS0124S001SP	HZBS0124AS001	HZBS0124AS002
				Collection Date:		6/1/2009	10/1/2009	10/1/2009	6/1/2009	6/1/2009	10/1/2009	10/1/2009
				Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	1.75 - 2.25	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	3.0 - 3.5
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	--	--	--	9,320	10,600	--	--	10,500	14,100
Antimony	mg/kg	10	--	--	--	--	<1.54 J	<1.52 J	--	--	<1.36 J	<1.49 J
Arsenic	mg/kg	15	--	--	--	--	5.06	5	--	--	5.56	5.37
Barium	mg/kg	140	--	--	--	--	88.1	69	--	--	82.8	93
Beryllium	mg/kg	1.1	--	--	--	--	0.608	0.622	--	--	0.69	0.736
Boron	mg/kg	9.7	--	--	--	--	4.19 J	2.69 J	--	--	2.98 J	3.00 J
Cadmium	mg/kg	1	--	--	--	--	0.338	0.205	--	--	0.269	0.188 J
Chromium	mg/kg	36.8	--	--	--	--	18.3	19.9	--	--	18.1	17.4
Cobalt	mg/kg	21	--	--	--	--	5.85	7.19	--	--	6.06	5.46
Copper	mg/kg	29	29	--	--	11.5 J	9.87	7.69	8.91 J	8.1	9.28	8.89
Lead	mg/kg	34	34	--	--	17 J	20.4	7.97	12.7	12	10.5	7.95
Mercury	mg/kg	0.09	--	--	--	--	0.0219 J	0.00769 J	--	--	0.0113 J	0.0109 J
Molybdenum	mg/kg	5.3	--	--	--	--	0.53	0.498	--	--	0.587	0.555
Nickel	mg/kg	29	--	--	--	--	13.2	12	--	--	13.3	12
Selenium	mg/kg	0.655	--	--	--	--	0.486	<0.509	--	--	<0.505	<0.504
Silver	mg/kg	0.79	--	--	--	--	0.0721 J	0.0432 J	--	--	0.071 J	0.0691 J
Thallium	mg/kg	0.46	--	--	--	--	0.306	0.275	--	--	0.294	0.269
Vanadium	mg/kg	62	--	--	--	--	33.6	33.5	--	--	33.8	32.8
Zinc	mg/kg	110	--	--	--	--	58.3	53.1	--	--	53.1	52.8
ASBESTOS												
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--
PCBs												
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	<0.00337	<0.00343	--	--	<0.00340	<0.00347
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	<0.00337	<0.00343	--	--	<0.00340	<0.00347
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	<0.00337	<0.00343	--	--	<0.00340	<0.00347
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	<0.00337	<0.00343	--	--	<0.00340	<0.00347
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	<0.00337	<0.00343	--	--	<0.00340	<0.00347
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	0.0025 J	<0.00343	--	--	<0.00340	<0.00347
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	0.00520 J	<0.00343	--	--	<0.00340	<0.00347
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	0.197	--	0.00628	0.162	0.120	--	0.0595

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0129**	**HZBS0130**	**HZBS0131**	**HZBS0132**	**HZBS0133**	**HZBS0134**	**HZBS0135**	**HZBS0136**
				Sample Name:		HZBS0129S001	HZBS0130S001	HZBS0131S001	HZBS0132S001	HZBS0133S001	HZBS0134S001	HZBS0135S001	HZBS0136S001
				Collection Date:		7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009
				Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
				Status:		In Place	In Place	Excavated	In Place	Excavated	Excavated	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--	--	--	--
Antimony	mg/kg	10	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/kg	15	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/kg	140	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/kg	1.1	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/kg	21	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/kg	29	29	--	--	--	--	--	--	--	--	--	--
Lead	mg/kg	34	34	--	--	10.1 J	9.12 J	39.3 J	33.7 J	40.7 J	48.6 J	12.8 J	12.0 J
Mercury	mg/kg	0.09	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/kg	5.3	--	--	--	--	--	--	--	--	--	--	--
Nickel	mg/kg	29	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/kg	0.79	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	--	--	--	--	--	--	--	--	--	--
Vanadium	mg/kg	62	--	--	--	--	--	--	--	--	--	--	--
Zinc	mg/kg	110	--	--	--	--	--	--	--	--	--	--	--
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
DIOXINS													
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	--	--	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0137**	**HZBS0138**	**HZBS0139**	**HZBS0140**	**HZBS0141**	**HZBS0142**	**HZBS0143**	**HZBS0150**
				Sample Name:		HZBS0137S001	HZBS0138S001	HZBS0139S001	HZBS0140S001	HZBS0141S001	HZBS0142S001	HZBS0143S001	HZBS0150S001
				Collection Date:		7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/15/2009
				Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
				Status:		Excavated	Excavated	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--	--	--	--
Antimony	mg/kg	10	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/kg	15	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/kg	140	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/kg	1.1	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/kg	21	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/kg	29	29	--	--	--	--	--	--	--	--	--	--
Lead	mg/kg	34	34	--	--	15.7 J	51.4 J	19.9 J	16.5 J	21.1 J	18.0 J	33.9 J	15.9 J
Mercury	mg/kg	0.09	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/kg	5.3	--	--	--	--	--	--	--	--	--	--	--
Nickel	mg/kg	29	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/kg	0.79	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	--	--	--	--	--	--	--	--	--	--
Vanadium	mg/kg	62	--	--	--	--	--	--	--	--	--	--	--
Zinc	mg/kg	110	--	--	--	--	--	--	--	--	--	--	--
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
DIOXINS													
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	--	--	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0158**	**HZBS0159**	**HZBS0160**	**HZBS0161**	**HZBS0162**	**HZBS0163**	**HZBS0164**	**HZBS0173**
				Sample Name:		HZBS0158S001	HZBS0159S001	HZBS0160S001	HZBS0161S001	HZBS0162S001	HZBS0163S001	HZBS0164S001	HZBS0173S001
				Collection Date:		7/1/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009	8/20/2009
				Sample Depth (feet bgs):		0.0 - 0.5	0.2 - 0.7	0.2 - 0.7	1.3 - 1.8	0.6 - 1.1	0.5 - 1.0	0.7 - 1.2	0.5 - 1.0
				Status:		In Place	In Place	Excavated	In Place	In Place	In Place	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--	--	--	8,910
Antimony	mg/kg	10	--	--	--	0.98	<1	<0.98	<0.93	<1.1	<0.9	<0.91	0.501 J
Arsenic	mg/kg	15	--	--	--	3	5	4	4.1	4.2	3.9	3.7	4.43
Barium	mg/kg	140	--	--	--	98	68	69	48	46	49	80	70.7
Beryllium	mg/kg	1.1	--	--	--	0.55 J	0.63	0.71	0.68	0.53 J	0.56	0.68	0.593
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--	--	--	<1.02 J
Cadmium	mg/kg	1	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.315 P
Chromium	mg/kg	36.8	--	--	--	13	13	14	13	13	14	13	0.315
Cobalt	mg/kg	21	--	--	--	5.5	4.9	4.7	3.9	3.2	4	4	16
Copper	mg/kg	29	29	--	--	12	8.9	9.3	4.5	6.4	5.6	7.3	4.82
Lead	mg/kg	34	34	--	--	12	11	37	4.5	7.1	5.5	5.4	10.9 J
Mercury	mg/kg	0.09	--	--	--	0.018 J	0.016 J	0.021 J	0.012 J	0.011 J	0.012 J	0.014 J	0.0172 J
Molybdenum	mg/kg	5.3	--	--	--	0.93 J	<0.81	0.81 J	0.61 J	0.81 J	0.6 J	0.74 J	0.453
Nickel	mg/kg	29	--	--	--	9.4	9.2	11	6.2	7.9	8.1	10	9.62
Selenium	mg/kg	0.655	--	--	--	<1	<1	<1	<1	<1	<1	<1	<0.514
Silver	mg/kg	0.79	--	--	--	<0.9	2.6	<0.9	<0.8	<1	<0.8	<0.8	0.0966 J
Thallium	mg/kg	0.46	--	--	--	<0.9	<0.9	<0.9	1.1 J	1 J	0.97 J	<0.8	<0.25
Vanadium	mg/kg	62	--	--	--	31	24	27	22	22	23	23	26.1
Zinc	mg/kg	110	--	--	--	60	43	43	36	43	42	38	54.3
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	ND
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	<0.00342
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	<0.00342
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	<0.00342
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	<0.00342
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	<0.00342
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	0.0049
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	0.0043
DIOXINS													
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	--	--	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0173**	**HZBS0174**	**HZBS0174**	**HZBS0175**	**HZBS0175**	**HZBS0177**	**HZBS0177**	**HZBS0178**
				Sample Name:		HZBS0173S002	HZBS0174S001	HZBS0174S002	HZBS0175S001	HZBS0175S002	HZBS0177S001	HZBS0177S002	HZBS0178S001
				Collection Date:		8/20/2009	8/20/2009	8/20/2009	10/1/2009	10/1/2009	10/1/2009	10/1/2009	9/30/2009
				Sample Depth (feet bgs):		3.5 - 4.0	0.5 - 1.0	4.5 - 5.0	0.0 - 0.5	1.0 - 1.15	0.0 - 0.5	3.0 - 3.5	0.0 - 0.5
				Status:		Excavated	Excavated	Excavated	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Aluminum	mg/kg	20,000	--	--	--	6,180	8,500	9,680	10,900	9,570	10,400	13,000	10,800
Antimony	mg/kg	10	--	--	--	<0.352 J	<0.342 J	<0.343 J	1.71 J	<1.21 J	<1.40 J	1.71 J	1.12 J
Arsenic	mg/kg	15	--	--	--	2.89	3.56	2.47	5.85	4.33	5.48	5.91	5.86 J
Barium	mg/kg	140	--	--	--	63.8	67.4	40.3	82.1	63.9	83.7	101	84.9 J
Beryllium	mg/kg	1.1	--	--	--	0.506	0.599	0.489	0.696	0.55	0.632	0.756	0.619 J
Boron	mg/kg	9.7	--	--	--	<1.07 J	<1.04 J	<1.04 J	4.11 J	2.19 J	3.44 J	2.95 J	3.47 J
Cadmium	mg/kg	1	--	--	--	0.22	0.185 J	0.0962 J	0.29	0.149 J	0.278	0.168 J	0.224
Chromium	mg/kg	36.8	--	--	--	13.9	18.6	16	19.7	16	17.7	19.3	18.6 J
Cobalt	mg/kg	21	--	--	--	3.8	4.39	3.12	5.94	6.65	6.13	7.18	5.83 J
Copper	mg/kg	29	29	--	--	7.75 J	5.29 J	3.87 J	11.3	7.18	9.96	8	10.7 J
Lead	mg/kg	34	34	--	--	8.32	9.9	4.48	17.3	6.84	15.9	7.76	15.0 J
Mercury	mg/kg	0.09	--	--	--	0.0135 J	0.0112 J	<0.00368 J	0.0146 J	0.00874 J	0.0158 J	0.0104 J	0.0174 J
Molybdenum	mg/kg	5.3	--	--	--	0.313	0.378	0.174 J	0.509	0.314	0.578	0.536	0.506
Nickel	mg/kg	29	--	--	--	7.65	13.2	6.15	14.4	11	13.8	13.1	13.9 J
Selenium	mg/kg	0.655	--	--	--	<0.516	<0.523	<0.525	<0.496	<0.498	<0.503	<0.541	<0.486
Silver	mg/kg	0.79	--	--	--	0.0801 J	0.0544 J	<0.042	0.086 J	0.0465 J	0.0677 J	0.0673 J	0.0661 J
Thallium	mg/kg	0.46	--	--	--	<0.22	<0.217	<0.21	0.314	0.266	0.283	0.295	0.299
Vanadium	mg/kg	62	--	--	--	22.9	25.7	24.5	35.8	29.9	31.6	35.9	39.6 J
Zinc	mg/kg	110	--	--	--	43.3	44.7	34.5	57.6	48.7	50.8	51.3	60.5 J
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	ND	ND	ND	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00354	<0.00349	<0.00349	<0.00338	<0.00341	<0.00337	<0.00374	<0.00340
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00354	<0.00349	<0.00349	<0.00338	<0.00341	<0.00337	<0.00374	<0.00340
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00354	<0.00349	<0.00349	<0.00338	<0.00341	<0.00337	<0.00374	<0.00340
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00354	<0.00349	<0.00349	<0.00338	<0.00341	<0.00337	<0.00374	<0.00340
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00354	<0.00349	0.274 J	<0.00338	<0.00341	<0.00337	<0.00374	<0.00340
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00354	0.0017 J	0.222	<0.00338	<0.00341	<0.00337	<0.00374	0.00290 J
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00354	0.0017 J	0.0915 J	<0.00338	<0.00341	<0.00337	<0.00374	0.0044
DIOXINS													
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	0.0299	0.0307	0.0557	0 *	0.2390

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZBS0178**	**HZBS0179**	**HZBS0179**	**HZBS0180**	**HZBS0180**	**ISWC0028**	**ISWC0077**	**ISWC0078**
				Sample Name:		HZBS0178S002	HZBS0179S001	HZBS0179S002	HZBS0180S001	HZBS0180S002	ISWC0028S001	ISWC0077S001	ISWC0078S001
				Collection Date:		9/30/2009	9/30/2009	9/30/2009	10/1/2009	10/1/2009	7/1/2009	7/29/2009	7/29/2009
				Sample Depth (feet bgs):		3.0 - 3.5	0.0 - 0.5	2.5 - 3.0	0.0 - 0.5	3.0 - 3.5	0.4 - 0.9	0.3 - 0.7	1.0 - 1.5
				Status:		In Place	In Place	In Place	In Place	In Place	Excavated	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
METALS													
Aluminum	mg/kg	20,000	--	--	--	16,100	10,400	12,600	9,260	12,000	--	--	--
Antimony	mg/kg	10	--	--	--	2.33 J	1.97 J	2.19 J	<1.26 J	<1.45 J	<0.88	<0.88	<0.88
Arsenic	mg/kg	15	--	--	--	5.42 J	5.58 J	2.87 J	5.29	4.78	4.2	8.9	3.7
Barium	mg/kg	140	--	--	--	81.6 J	78.7 J	61.6 J	79.2	78.7	59	54	48
Beryllium	mg/kg	1.1	--	--	--	0.786 J	0.644 J	0.664 J	0.581	0.634	0.63	0.85	0.51
Boron	mg/kg	9.7	--	--	--	2.84 J	3.73 J	2.36 J	3.53 J	2.94 J	--	--	--
Cadmium	mg/kg	1	--	--	--	0.0568 J	0.187 J	0.0483 J	0.276	0.151 J	<0.2	<0.2	<0.2
Chromium	mg/kg	36.8	--	--	--	20.9 J	17.0 J	12.2 J	16.7	14.7	12	23	9.7
Cobalt	mg/kg	21	--	--	--	5.74 J	5.40 J	3.57 J	5.59	4.81	4.1	7.7	3
Copper	mg/kg	29	29	--	--	9.03 J	8.47 J	4.65 J	8.86	6.72	8.9	17	3.8
Lead	mg/kg	34	34	--	--	8.14 J	11.1 J	5.12 J	13	7.08	30	8.4	3.4
Mercury	mg/kg	0.09	--	--	--	0.015 J	0.0153 J	0.00916 J	<0.00357 J	0.0104 J	0.02 J	0.025 J	<0.0055
Molybdenum	mg/kg	5.3	--	--	--	0.38	0.458	0.274	0.579	0.532	0.82 J	0.22 J	<0.2
Nickel	mg/kg	29	--	--	--	12.5 J	12.5 J	7.74 J	12	9.42	9.1	14	4.4
Selenium	mg/kg	0.655	--	--	--	<0.505	<0.501	<0.497	<0.506	<0.501	<1	<1	<1
Silver	mg/kg	0.79	--	--	--	0.0584 J	0.0554 J	<0.0398	0.0677 J	0.0678 J	<0.8	<0.8	<0.8
Thallium	mg/kg	0.46	--	--	--	0.23	0.253	0.2	0.299	0.251	0.81 J	<0.8	<0.8
Vanadium	mg/kg	62	--	--	--	47.0 J	33.5 J	24.0 J	31.9	31.3	23	33	19
Zinc	mg/kg	110	--	--	--	49.2 J	51.8 J	41.2 J	52.7	49.5	38	53	31
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00352	<0.00339	<0.00347	<0.00340	<0.00347	--	--	--
DIOXINS													
TCDD TEQ	pg/g	0.87	3.0	--	--	0.1831	0.2098	0.0413	0.0569	0 *	--	--	--

TABLE E-5.1 HVS-2A PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**ISWC0079**	**ISWC0080**	**ISWC0081**	**ISWC0082**	**ISWC0083**
				Sample Name:		ISWC0079S001	ISWC0080S001	ISWC0081S001	ISWC0082S001	ISWC0083S001
				Collection Date:		7/29/2009	7/29/2009	7/29/2009	7/30/2009	7/30/2009
				Sample Depth (feet bgs):		0.7 - 1.3	0.3 - 0.7	1.5 - 2.0	1.0 - 1.5	1.0 - 1.5
				Status:		Excavated	Excavated	Excavated	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**Lowest Characterization RBSL [a]**	**RBSL Type**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
METALS										
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--
Antimony	mg/kg	10	--	--	--	<0.88	<0.88	<0.88	<0.88	<0.88
Arsenic	mg/kg	15	--	--	--	4.3	5.2	4.5	3.7	3.1
Barium	mg/kg	140	--	--	--	53	99	92	81	84
Beryllium	mg/kg	1.1	--	--	--	0.62	0.84	0.68	0.55	0.54
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	mg/kg	36.8	--	--	--	12	17	14	14	13
Cobalt	mg/kg	21	--	--	--	3.6	7.5	5.5	4.2	4.3
Copper	mg/kg	29	29	--	--	4.7	8.5	5.8	7.1	6.9
Lead	mg/kg	34	34	--	--	5.9	8.2	4.6	19	17
Mercury	mg/kg	0.09	--	--	--	0.012 J	0.018 J	0.0083 J	0.012 J	0.011 J
Molybdenum	mg/kg	5.3	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	mg/kg	29	--	--	--	7.4	12	9.6	9.7	9.5
Selenium	mg/kg	0.655	--	--	--	<1	<1	1.5 J	1.3 J	<1
Silver	mg/kg	0.79	--	--	--	<0.8	<0.8	<0.8	<0.8	<0.8
Thallium	mg/kg	0.46	--	--	--	<0.8	<0.8	<0.8	<0.8	<0.8
Vanadium	mg/kg	62	--	--	--	22	31	27	24	23
Zinc	mg/kg	110	--	--	--	34	42	37	41	39
ASBESTOS										
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--
PCBs										
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--
DIOXINS										
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--

TABLE E-5.1 HVS-2A FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not analyzed / not applicable

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

[a] Soil background values from MWH (September 2005) Soil Background Report, Santa Susana Field Laboratory, Ventura County, California. A-01 - Sample result might be biased high due to coelution of Aroclors 1254 and 1260. The data was reprocessed in a different way as the calibration (3 peaks were used in the confirmation column).

[b] ISRA SRGs are established for ISRA Constituents of Concern, which include constituents that were detected at concentrations that exceeded NPDES permit limits/benchmarks. 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.

bgs - below ground surface

[c] Waste characterization sample results not validated

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

ECO - Ecological RBSL

Grey highlighted cells indicate concentration exceeds the Soil Remediation Goal (SRG).

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

SRG - Soil Remediation Goal

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

Outfall 008, HVS-2A
Confirmation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Planned Excavation Area
- Actual Excavation Area
- Previously Excavated Area
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern

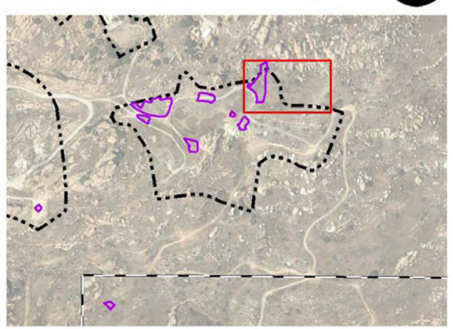
Soil Remediation Goals (SRGs)
Copper = 29 mg/kg
Lead = 34 mg/kg
Dioxins = 3.0 pg/g

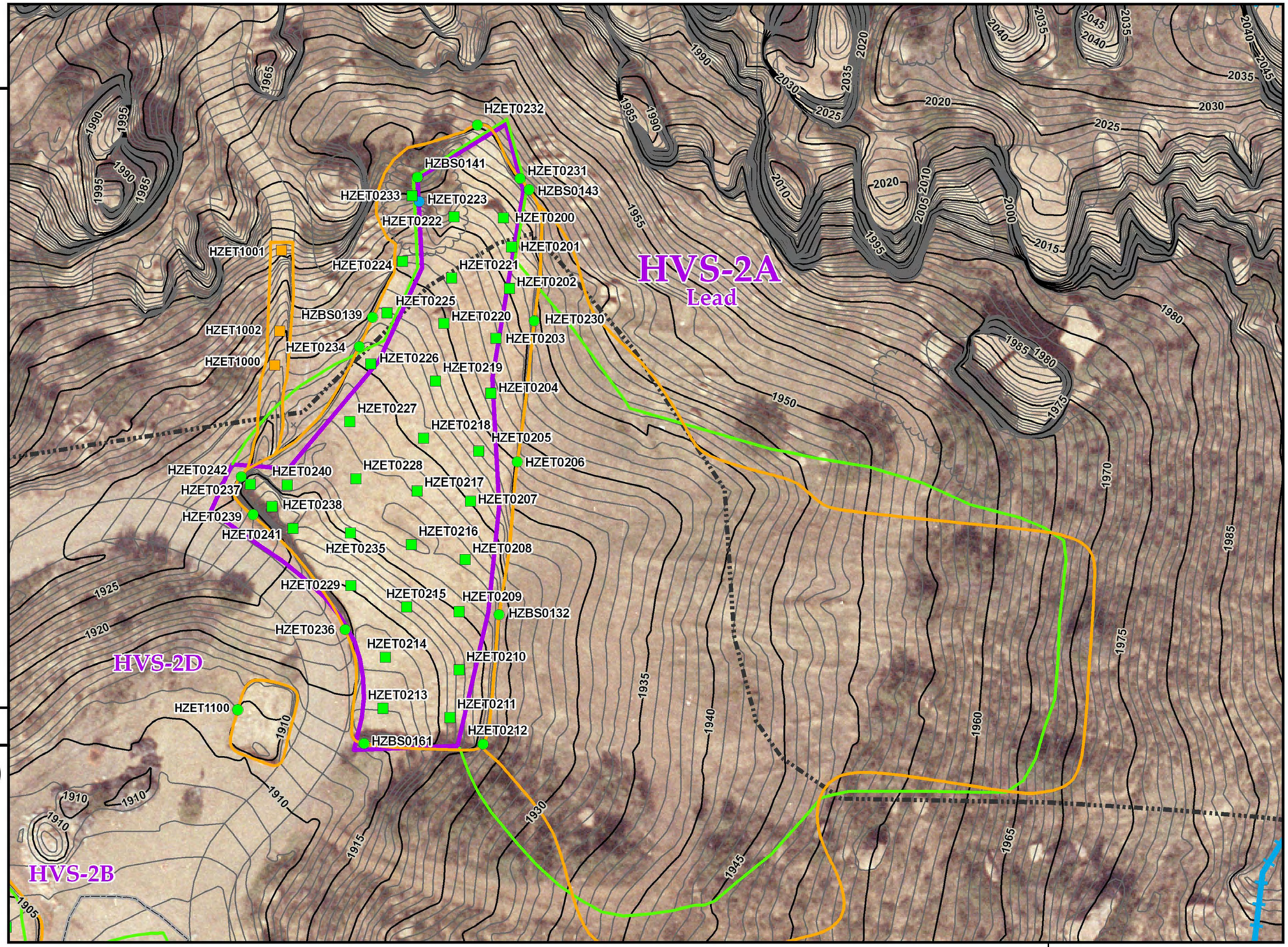
- Floor Sample On Hold / Sample Results Pending
- Floor Sample > SRGs
- Floor Sample <= SRGs
- Sidewall Sample On Hold / Sample Results Pending
- Sidewall Sample > SRGs
- Sidewall Sample <= SRGs
- Floor Sample not analyzed for ISRA COCs

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD TEQ.
2. Sample IDs shown represent ISRA excavation confirmation samples.
3. Copper and Lead SRG is equal to the 2005 background comparison concentration, and the SRG for dioxins is approximately 3 times the 2005 background comparison concentration.
4. Aerial imagery from Sage, November 2009.
5. Topographic contours from Sage, November 2009.

Date: November 13, 2009

0 17.5 35 70 Feet





SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-5.2

Printing Date: March 29, 2010 File: \\uspas1netapp1\DEI\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall 008\Final\008 ISRA_HVS-2A_ConfirmationSamplesFinal.mxd

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0200**	**HZET0200**	**HZET0201**	**HZET0202**	**HZET0203**	**HZET0204**	**HZET0205**	**HZET0206**
				Sample Name:		HZET0200S001	HZET0200S001SP	HZET0201S001	HZET0202S001	HZET0203S001	HZET0204S001	HZET0205S001	HZET0206S001
				Collection Date:		9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009
				Sample Type:		Floor	Floor	Floor	Floor	Floor	Floor	Floor	Sidewall
				Sample Depth (feet)[a]:		3.5 - 4.0	3.5 - 4.0	3.75 - 4.25	4.0 - 4.5	5.0 - 5.5	4.25 - 4.75	4.5 - 5.0	0.3 - 0.5
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Lead	mg/kg	34	34	--	--	4.68	5.4	4.73	4.59	4.44	4.52	5.78	11.9
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0207**	**HZET0208**	**HZET0209**	**HZET0209**	**HZET0210**	**HZET0211**	**HZET0212**	**HZET0213**
				Sample Name:		HZET0207S001	HZET0208S001	HZET0209S001	HZET0209S001SP	HZET0210S001	HZET0211S001	HZET0212S001	HZET0213S001
				Collection Date:		9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/10/2009	9/14/2009
				Sample Type:		Floor	Floor	Floor	Floor	Floor	Floor	Sidewall	Floor
				Sample Depth (feet)[a]:		3.5 - 4.0	3.25 - 3.75	3.75 - 4.25	3.75 - 4.25	4.5 - 5.0	4.0 - 4.5	1.3 - 1.5	4.0 - 4.5
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Lead	mg/kg	34	34	--	--	6.3	11	6.13	7.7	5.8	5.72	7.79	15.2 J
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0214**	**HZET0215**	**HZET0216**	**HZET0217**	**HZET0218**	**HZET0219**	**HZET0219**	**HZET0220**
				Sample Name:		HZET0214S001	HZET0215S001	HZET0216S001	HZET0217S001	HZET0218S001	HZET0219S001	HZET0219S001SP	HZET0220S001
				Collection Date:		9/14/2009	9/14/2009	9/14/2009	9/14/2009	9/14/2009	9/14/2009	9/14/2009	9/14/2009
				Sample Type:		Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor
				Sample Depth (feet)[a]:		4.0 - 4.5	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Lead	mg/kg	34	34	--	--	3.16 J	4.10 J	4.97 J	6.92 J	5.24 J	3.56 J	4.1	5.64 J
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 008

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0221**	**HZET0222**	**HZET0223**	**HZET0224**	**HZET0225**	**HZET0226**	**HZET0227**	**HZET0228**
				Sample Name:		HZET0221S001	HZET0222S001	HZET0223S001	HZET0224S001	HZET0225S001	HZET0226S001	HZET0227S001	HZET0228S001
				Collection Date:		9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009
				Sample Type:		Floor	Floor	Sidewall	Floor	Floor	Floor	Floor	Floor
				Sample Depth (feet)[a]:		3.75 - 4.25	3.5 - 4.0	0.8 - 1.0	3.5 - 4.0	3.25 - 3.75	3.5 - 4.0	4.0 - 4.5	4.0 - 4.5
				Status:		In Place	In Place	Excavated	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Lead	mg/kg	34	34	--	--	4.98	4.17	35.9	6.51	5.33	4.97	6.57	4.86
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0229**	**HZET0230**	**HZET0231**	**HZET0232**	**HZET0233**	**HZET0234**	**HZET0235**	**HZET0236**
				Sample Name:		HZET0229S001	HZBS0230S001	HZBS0231S001	HZBS0232S001	HZBS0233S001	HZBS0234S001	HZBS0235S001	HZBS0236S001
				Collection Date:		9/15/2009	9/29/2009	9/29/2009	9/29/2009	9/29/2009	9/29/2009	9/29/2009	9/29/2009
				Sample Type:		Floor	Sidewall	Sidewall	Sidewall	Floor	Sidewall	Floor	Sidewall
				Sample Depth (feet)[a]:		3.5 - 4.0	2.3 - 2.5	1.3 - 1.5	0.4 - 0.6	1.3 - 1.5	1.0 - 1.25	3.65 - 3.75	1.0 - 1.2
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Lead	mg/kg	34	34	--	--	7.38	4.7	5.76	17.9	7.92	22.9	4.32	7.18
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
PCBs													
Aroclor 1016	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	--	--	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	--	--	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	--	--	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	--	--	--	--	--	--	--	--

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0237**	**HZET0237**	**HZET0238**	**HZET0238**	**HZET0239**	**HZET0240**	**HZET0241**
				Sample Name:		HZET0237S001	HZET0237S001-RWQCB	HZET0238S001	HZET0238S001-RWQCB	HZET0239S001	HZET0240S001	HZET0241S001
				Collection Date:		10/5/2009	10/5/2009	10/5/2009	10/5/2009	10/5/2009	10/5/2009	10/5/2009
				Sample Type:		Floor	Floor	Floor	Floor	Sidewall	Floor	Floor
				Sample Depth (feet)[a]:		6.5 - 7.0	6.5 - 7.0	5.75 - 6.25	5.75 - 6.25	4.0 - 4.5	6.0 - 6.5	4.0 - 4.5
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Lead	mg/kg	34	34	--	--	7.56	3.08	4.19	3.62	10.2	8.08	6.07
ASBESTOS												
Asbestos	mg/kg	--	--	--	--	<1.0	ND	<1.0	ND	<1.0	<1.0	<1.0
PCBs						<0.00345	<0.033	<0.00349	<0.033	<0.00353	<0.00358	<0.00357
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00345	<0.067	<0.00349	<0.067	<0.00353	<0.00358	<0.00357
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00345	<0.033	<0.00349	<0.033	<0.00353	<0.00358	<0.00357
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00345	<0.033	<0.00349	<0.033	<0.00353	<0.00358	<0.00357
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00345	<0.033	<0.00349	<0.033	<0.00353	<0.00358	<0.00357
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00345	<0.033	<0.00349	<0.033	<0.00353	<0.00358	<0.00357
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00345	<0.033	<0.00349	<0.033	0.0067 J	<0.00358	<0.00357
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00345	<0.033	<0.00349	<0.033	0.0063	<0.00358	<0.00357

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 008

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET0242**	**HZET1000**	**HZET1000**	**HZET1001**	**HZET1001**	**HZET1001**	**HZET1001**
				Sample Name:		HZET0242S001	HZET1000S001	HZET1000S001-RWQCB	HZET1001S001	HZET1001S001-RWQCB	HZET1001S002	HZET1001S002-RWQCB
				Collection Date:		10/6/2009	10/6/2009	10/6/2009	10/6/2009	10/6/2009	10/6/2009	10/6/2009
				Sample Type:		Sidewall	Floor	Floor	Floor	Floor	Floor	Floor
				Sample Depth (feet)[a]:		3.8 -4.0	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.5 - 2.0	1.5 - 2.0
				Status:		In Place	Excavated	Excavated	Excavated	Excavated	Excavated	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Lead	mg/kg	34	34	--	--	4.76	--	--	--	--	--	--
ASBESTOS												
Asbestos	mg/kg	--	--	--	--	<1.0	<1.0	ND	<1.0	ND	<1.0	ND
PCBs						<0.00359	<0.00343	<0.033	<0.00339	<0.033	<0.00341	<0.033
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00359	<0.00343	<0.067	<0.00339	<0.067	<0.00341	<0.067
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00359	<0.00343	<0.033	<0.00339	<0.033	<0.00341	<0.033
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00359	<0.00343	<0.033	<0.00339	<0.033	<0.00341	<0.033
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00359	<0.00343	<0.033	0.0361	<0.033	<0.00341	<0.033
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00359	<0.00343	<0.033	<0.00339	<0.033	<0.00341	<0.033
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00359	0.108	<0.033	0.046	<0.033	0.0224	<0.033
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00359	0.0394	<0.033	0.0124	<0.033	0.0085	<0.033

TABLE E-5.2 HVS-2A CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**HZET1002**	**HZET1002**	**HZBS0132**	**HZBS0139**	**HZBS0141**	**HZBS0143**	**HZBS0161**	**HZBS0164**
				Sample Name:		HZET1002S001	HZET1002S001-RWQCB	HZBS0132S001	HZBS0139S001	HZBS0141S001	HZBS0143S001	HZBS0161S001	HZBS0164S001
				Collection Date:		10/19/2009	10/19/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/1/2009	7/1/2009
				Sample Type:		Floor	Floor	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
				Sample Depth (feet)[a]:		1.5 - 2.0	1.5 - 2.0	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	1.3 - 1.8	0.7 - 1.2
				Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**Lowest Characterization RBSL [b]**	**RBSL Type**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS													
Lead	mg/kg	34	34	--	--	--	--	33.7 J	19.9 J	21.1 J	33.9 J	4.5	5.4
ASBESTOS													
Asbestos	mg/kg	--	--	--	--	<1.0 P	ND	--	--	--	--	--	--
PCBs						<0.00351 P	<0.033	--	--	--	--	--	--
Aroclor 1016	mg/kg	--	--	1.6	ECO	<0.00351 P	<0.067	--	--	--	--	--	--
Aroclor 1221	mg/kg	--	--	1.6	ECO	<0.00351 P	<0.033	--	--	--	--	--	--
Aroclor 1232	mg/kg	--	--	0.078	ECO	<0.00351 P	<0.033	--	--	--	--	--	--
Aroclor 1242	mg/kg	--	--	0.079	ECO	<0.00351 P	<0.033	--	--	--	--	--	--
Aroclor 1248	mg/kg	--	--	0.011	ECO	<0.00351 P	<0.033	--	--	--	--	--	--
Aroclor 1254	mg/kg	--	--	0.078	ECO	<0.00351 P	<0.033	--	--	--	--	--	--
Aroclor 1260	mg/kg	--	--	0.078	ECO	<0.00351 P	<0.033	--	--	--	--	--	--

TABLE E-5.2 CONFIRMATION FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not applicable, not analyzed

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

[a] feet below pre-existing ground surface

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

[c] SRGs are for ISRA COCs. 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.

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds SRG[c]

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

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

RWQCB - Regional Water Quality Control Board split samples.

Outfall 008, HVS-2B
Pre-Excavation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Planned Excavation Area
- Previously Excavated Area
- Potential Local Borrow Source
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Surface Water Drainage
- Elevation Contour
- Sample On Hold

ISRA Constituents of Concern
Copper, Lead, Dioxins

2005 Background Comparison Concentrations
Copper: 29 mg/kg
Lead: 34 mg/kg
Dioxins (TCDD TEQ): 0.87 pg/g

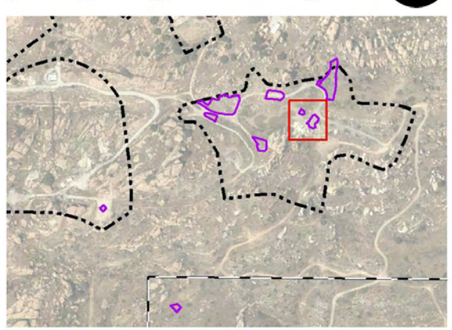
Copper and/or Lead Sample Location (<6 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG

Dioxin Sample Location (<6 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG
- ≥100x BG

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD TEQ.
2. Extent of local borrow source generalized and approximate. Actual extent will vary based on final excavation extents, as directed by project engineer.
3. Sample IDs shown represent ISRA data gap, ISRA waste characterization and RCRA RFI samples located in the vicinity of the ISRA area.
4. Aerial imagery from Google Earth, 2007.
5. Topographic contours from Sage, July 2009.

Date: August 24, 2009

0 10 20 40 Feet



HVS-2B-1
Copper, Lead

HZBS0172
HZBS0088
HZBS0171
HZBS0086
HZBS0144
HZBS0170
ISWC0084
HZBS0168
HVTC21S12
HVTC21S13
ISWC0085
HZBS0169
HVTC21S07
HVTC21S08
HVTC21S09
HZBS0095
HZBS0166
HZBS0167
HVTC21S11
Cu: 70.9 mg/kg
2.4 x BG
HVTC21S10
Pb: 42.5 mg/kg
1.25 x BG

HVS-2B-2
Copper

HZBS0093
HZBS0165
HZBS0087
HZBS0148
HZBS0147
ISWC0086
HVTC10S08
HVTC10S09
Cu: 48.4 mg/kg
1.7 x BG
HZBS0146
ISWC0087
HVTC12S01
Cu: 76 mg/kg
2.6 x BG
HVTC12S06
ISWC0089
HVTC10S10
Cu: 414 mg/kg
14 x BG
ISWC0088
Cu: 110 mg/kg
3.8 x BG
HVBS99
Cu: 39 mg/kg
1.3 x BG
HZBS0094
HVTC13S44

HZBS0129
HZBS0092
HVBS96
HVTC10S11
HVBS97
HVTC10S12
HVBS98

1910
1920
1900
1900
1890
1870
1890
1860
1880

SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-6.1

Printing Date: March 29, 2010 File: \\uspas1netapp1\DEI\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall 008\Final\008 ISRA_HVS-2B-1_PreExcavationSamplesFinal.mxd

TABLE E-6.1 HVS-2B-1 PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HVTC21S07**	**HVTC21S08**	**HVTC21S09**	**HVTC21S10**	**HVTC21S11**	**HVTC21S12**	**HVTC21S13**	**HZBS0086**
		Sample Name:		MA546	MA547	MA548	MA549	MA550	MA551	MA552	HZBS0086S001
		Collection Date:		12/5/2003	12/5/2003	12/5/2003	12/5/2003	12/5/2003	12/5/2003	12/5/2003	2/24/2009
		Sample Depth (feet bgs):		0.0 - 0.5	3.0 - 3.0	6.0 - 6.0	0.0 - 0.5	3.0 - 3.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
		Status		In Place	In Place	In Place	Excavated	Excavated	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS											
Aluminum	mg/kg	20,000	--	8,300	13,800	7,430	9,770	12,900	13,700	7,560	--
Antimony	mg/kg	8.7	--	<4.9	<5.2	<5.1	<4.9	<5.1	<4.4	<5.7	--
Arsenic	mg/kg	15	--	<0.34 J	<0.53 J	<1 J	<0.59 J	<1.9 J	<2.6 J	<0.7 J	4.5
Barium	mg/kg	140	--	56.3	87.5	47.2	73.9	72.3	63.5	31.7	--
Beryllium	mg/kg	1.1	--	0.8	1.2	0.94	1	1.2	1.1	0.69	--
Boron	mg/kg	9.7	--	<1.4	<1.5	<1.5	<1.4	<1.5	<1.3	<1.7	--
Cadmium	mg/kg	1	--	0.89	0.42	0.31	0.8	1.1	0.66	0.34	0.4
Calcium	mg/kg	--	--	4,010	1,560	1,240	2,190	2,890	2,930	1,400	--
Chromium	mg/kg	36.8	--	16.2	17.9	11.7	14.7	27.1	22.7	12.6	--
Cobalt	mg/kg	21	--	6.4	4.9	4.6	6.8	10.1	8.2	4.2	--
Copper	mg/kg	29	29	9.1	3.6	3.6	10.6	70.9	14.6	3	15.9 J
Iron	mg/kg	28,000	--	14,700	18,000	13,200	17,600	22,900	25,700	13,400	--
Lead	mg/kg	34	34	16.7	5.3	3.9	42.5	16.9	10.7	4.7	9.8
Magnesium	mg/kg	--	--	3,550	3,580	2,980	3,690	5,280	5,350	3,180	--
Manganese	mg/kg	495	--	195	124	118	270	271	228	112	--
Mercury	mg/kg	0.09	--	<0.045	<0.042	<0.042	<0.044	0.074	<0.042	<0.05	--
Molybdenum	mg/kg	5.3	--	<0.053 J	<0.056 J	<0.055 J	<0.054 J	<0.055 J	<0.048 J	<0.062 J	--
Nickel	mg/kg	29	--	9.1	7.6	4.6	10.5	26.6	15.3	4.9	--
Potassium	mg/kg	6,400	--	1,860	<1,370	1,340	2,580	2,030	1,910	1,120	--
Selenium	mg/kg	0.655	--	<14.2	<15.1	<14.9	<14.4	<14.9	<12.9	<16.7	--
Silver	mg/kg	0.79	--	<1.6	<1.7	<1.7	<1.6	<1.7	<1.5	<1.9	--
Sodium	mg/kg	110	--	128 J	151 J	114 J	117 J	222	107 J	236	--
Thallium	mg/kg	0.46	--	<5.7 J	<4.1 J	<4.5 J	<6.1 J	<7.5 J	<6.5 J	<7.2 J	--
Vanadium	mg/kg	62	--	24.6	29.7	23.2	26.8	33.9	34.8	21.2	--
Zinc	mg/kg	110	--	69.8	33.4	29.7	48.4	79.9	59.7	31.2	--

TABLE E-6.1 HVS-2B-1 PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		HZBS0088	HZBS0088	HZBS0095	HZBS0144	HZBS0166	HZBS0167	HZBS0168	HZBS0169
		Sample Name:		HZBS0088D001	HZBS0088S001	HZBS0095S001	HZBS0144S001	HZBS0166S001	HZBS0167S001	HZBS0168S001	HZBS0169S001
		Collection Date:		2/24/2009	2/24/2009	2/24/2009	7/14/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009
		Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	1.0 - 1.5	0.3 - 0.8	1.1 - 1.6
		Status		In Place	In Place	In Place	Excavated	In Place	In Place	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS											
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--	--
Antimony	mg/kg	8.7	--	--	--	--	--	<0.94 J	<0.98 J	<0.93 J	<0.96 J
Arsenic	mg/kg	15	--	5.4	4.2	4.3	7.89	5.6	4.8	4.5	4.6
Barium	mg/kg	140	--	--	--	--	--	85	85	80	87
Beryllium	mg/kg	1.1	--	--	--	--	--	0.73	0.73	0.69	0.8
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1	--	0.41	0.36	0.39	0.172 J	<0.2	<0.2	<0.2	<0.2
Calcium	mg/kg	--	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	--	--	--	--	25	26	25	28
Cobalt	mg/kg	21	--	--	--	--	--	8	8.5	8	8.6
Copper	mg/kg	29	29	15.3 J	13.9 J	14.8 J	16.0 J	15	15	14	15
Iron	mg/kg	28,000	--	--	--	--	--	--	--	--	--
Lead	mg/kg	34	34	12.7	11.1	9.8	9.20 J	7.9	7.5	6.9	8.9
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--	--
Manganese	mg/kg	495	--	--	--	--	--	--	--	--	--
Mercury	mg/kg	0.09	--	--	--	--	--	0.01 J	0.009 J	0.008 J	0.0086 J
Molybdenum	mg/kg	5.3	--	--	--	--	--	1.1 J	0.9 J	0.79 J	0.81 J
Nickel	mg/kg	29	--	--	--	--	--	16	17	16	17
Potassium	mg/kg	6,400	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	--	--	--	--	<1	<1	<1	<1
Silver	mg/kg	0.79	--	--	--	--	--	<0.9	<0.9	<0.8	<0.9
Sodium	mg/kg	110	--	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	--	--	--	--	1.2 J	<0.9	<0.8	<0.9
Vanadium	mg/kg	62	--	--	--	--	--	43	46	41	49
Zinc	mg/kg	110	--	77.5	71.7	--	--	64	67	63	71

TABLE E-6.1 HVS-2B-1 PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0170**	**HZBS0171**	**HZBS0172**	**ISWC0084**	**ISWC0085**
		Sample Name:		HZBS0170S001	HZBS0171S001	HZBS0172S001	ISWC0084S001	ISWC0085S001
		Collection Date:		7/1/2009	7/1/2009	7/1/2009	7/29/2009	7/29/2009
		Sample Depth (feet bgs):		1.1 - 1.6	0.5 - 1.0	0.0 - 0.5	1.0 - 1.5	0.5 - 1.0
		Status		In Place	In Place	In Place	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT[c]**	**RESULT[c]**
METALS								
Aluminum	mg/kg	20,000	--	--	--	--	--	--
Antimony	mg/kg	8.7	--	<0.96 J	<0.92 J	<0.95 J	<0.88	<0.88
Arsenic	mg/kg	15	--	3.8	7	6.4	4.9	4.7
Barium	mg/kg	140	--	41	59	48	67	85
Beryllium	mg/kg	1.1	--	0.63	0.7	0.81	0.61	0.66
Boron	mg/kg	9.7	--	--	--	--	--	--
Cadmium	mg/kg	1	--	<0.2	<0.2	<0.2	0.23 J	<0.2
Calcium	mg/kg	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	15	19	18	15	28
Cobalt	mg/kg	21	--	4	5.9	6.8	4.5	8
Copper	mg/kg	29	29	5	14	8.9	12	15
Iron	mg/kg	28,000	--	--	--	--	--	--
Lead	mg/kg	34	34	3.9	12	7.3	34	8
Magnesium	mg/kg	--	--	--	--	--	--	--
Manganese	mg/kg	495	--	--	--	--	--	--
Mercury	mg/kg	0.09	--	0.0069 J	0.022 J	0.027 J	0.017 J	0.0066 J
Molybdenum	mg/kg	5.3	--	0.7 J	0.86 J	0.68 J	<0.2	<0.2
Nickel	mg/kg	29	--	9	13	10	9.1	15
Potassium	mg/kg	6,400	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	<1	<1	<1	<1	<1
Silver	mg/kg	0.79	--	<0.9	<0.8	<0.9	<0.8	<0.8
Sodium	mg/kg	110	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	<0.9	<0.8	<0.9	<0.8	<0.8
Vanadium	mg/kg	62	--	21	30	29	25	50
Zinc	mg/kg	110	--	34	60	42	41	63

TABLE E-6.1 HVS-2B-1 FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not analyzed / not applicable

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

[b] ISRA SRGs are established for ISRA Constituents of Concern, which include constituents that were detected at concentrations that exceeded NPDES permit limits/benchmarks. 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.

bgs - below ground surface

[c] Waste characterization sample results not validated

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

SRG - Soil Remediation Goal

TABLE E-6.2 HVS-2B-2 PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HVBS96**	**HVBS97**	**HVBS98**	**HVBS99**	**HVTC10S08**	**HVTC10S09**	**HVTC10S10**	**HVTC10S11**	**HVTC10S12**
		Sample Name:		MA051	MA052	MA053	MA054	MA055	MA056	MA057	MA058	MA059
		Collection Date:		10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003
		Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	2.0	0.0 - 0.5
		Status		In Place	In Place	In Place	Excavated	Excavated	Excavated	Excavated	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	8,060	10,900	10,700	9,600	11,700	13,400	9,480	12,400	9,660
Antimony	mg/kg	8.7	--	<5.7	<4.8	<5.9	<6.3	<5.6	<6.4	<5.5	<5.5	<4.7
Arsenic	mg/kg	15	--	5	6.8	6.5	6.3	7	8.3	6.1	7.5	24.4
Barium	mg/kg	140	--	64.6	70.9	68.1	75.6	67.8	75.8	58.8	71.7	64.7
Beryllium	mg/kg	1.1	--	0.84	1.1	1	0.84	1	1.2	0.89	1.1	1.2
Boron	mg/kg	9.7	--	<7.8 J	<8.8 J	<8.8 J	<10 J	11.4 J	12.7 J	<10 J	10.9 J	13 J
Cadmium	mg/kg	1	--	0.055 J	0.16	0.13	0.7	0.22	0.49	0.45	0.11	0.13
Calcium	mg/kg	--	--	2,150	2,500	2,220	2,320	3,760	3,340	2,520	2,180	1,740
Chromium	mg/kg	36.8	--	11.6	14.4	14.4	16.2	16.2	25.3	16.7	16.2	16
Chromium, WET	mg/L	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/kg	21	--	6	7	6.7	6.4	6.2	7.4	5.4	6.5	7.5
Copper	mg/kg	29	29	8.8	7.9	7.7	39.3	15.9	48.4	414	7.9	12.8
Iron	mg/kg	28,000	--	14,200	16,900	16,300	15,500	17,400	21,800	15,200	16,900	24,800
Lead	mg/kg	34	34	6.4	9.3	8.6	12.4	11.4	13.2	16.8	8.6	10.7
Magnesium	mg/kg	--	--	3,340	3,690	3,470	3,310	4,100	4,540	3,360	3,310	3,120
Manganese	mg/kg	495	--	206	286	260	204	230	260	195	251	302
Mercury	mg/kg	0.09	--	<0.043	<0.043	<0.047	0.16	0.056	0.067	0.058	0.052	<0.044
Molybdenum	mg/kg	5.3	--	<0.062	<0.052	< 0.062	<0.068	<0.061	0.084	0.18	<0.06	1.6
Nickel	mg/kg	29	--	7	9	8.6	15.7	10.9	20.6	15.5	10.9	9.6
Potassium	mg/kg	6,400	--	2,220	2,580	2,100	1,770	2,300	2,090	1,900	2,390	1,790
Selenium	mg/kg	0.655	--	<16.6	<13.9	<17.3	<18.3	<16.3	<18.7	<16	<16.1	<13.6
Silver	mg/kg	0.79	--	<1.9	<1.6	<2	<2.1	<1.9	<2.1	<1.8	<1.8	<1.6
Sodium	mg/kg	110	--	136	117	119	129	176	146	170	127	106
Thallium	mg/kg	0.46	--	<11.9	<10	<12.4	<13	<11.6	<13.3	<11.4	<11.5	<9.7
Vanadium	mg/kg	62	--	25.2	27.3	27.5	26.5	29.5	35.5	25.9	29.3	36.1
Zinc	mg/kg	110	--	44.4	50.7	48.4	61.3	61.4	74.5	68.4	49.1	52.5
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	--	--

TABLE E-6.2 HVS-2B-2 PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		HVTC12S01	HVTC12S06	HVTC12S06	HVTC12S06	HVTC13S44	HZBS0087	HZBS0093	HZBS0094	HZBS0146
		Sample Name:		MG520	MB525	MG525	MG526	MG583	HZBS0087S001	HZBS0093S001	HZBS0094S001	HZBS0146S001
		Collection Date:		10/16/2003	10/16/2003	10/16/2003	10/16/2003	10/20/2003	2/24/2009	2/24/2009	2/24/2009	7/15/2009
		Sample Depth (feet bgs):		0.0 - 0.5	1.0 - 1.0	1.0 - 1.0	1.0 - 1.0	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
		Status		Excavated	In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	14,000	13,800	13,000	13,000	10,000	--	--	--	--
Antimony	mg/kg	8.7	--	0.53 R	<1.1	0.58 R	0.59 R	<0.54 J	--	--	--	--
Arsenic	mg/kg	15	--	6.7	5.6	8.3	6.7	4.9	4.8	4.4	4.7	3.74
Barium	mg/kg	140	--	67	65.3	61	64	52	--	--	--	--
Beryllium	mg/kg	1.1	--	<1.3	0.7	<1.4	<1.4	<1.3	--	--	--	--
Boron	mg/kg	9.7	--	1.5 J	2.1 J	1.2 J	<1.1	<6.4	--	--	--	--
Cadmium	mg/kg	1	--	<0.6	0.17	<0.7	<0.7	1.2	0.39	0.38	0.32	0.280
Calcium	mg/kg	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	18	15.8	22	21	16	--	--	--	--
Chromium, WET	mg/L	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/kg	21	--	4.8	5.1	6.9	4.6	4.4	--	--	--	--
Copper	mg/kg	29	29	76 J	7.7	16 J	14 J	25	16.9 J	15.3 J	14.8 J	12.5 J
Iron	mg/kg	28,000	--	--		--	--	--	--	--	--	--
Lead	mg/kg	34	34	9.7	6	20	10	7.9	9.6	9.8	9.5	8.54 J
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/kg	495	--	--	--	--	--	--	--	--	--	--
Mercury	mg/kg	0.09	--	0.031	0.022	0.024	0.015	0.063	--	--	--	--
Molybdenum	mg/kg	5.3	--	<0.99 J	0.64	<1.1 J	<0.55 J	0.75	--	--	--	--
Nickel	mg/kg	29	--	12	10.5	15	13	12	--	--	--	--
Potassium	mg/kg	6,400	--	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	<3.3	<0.57	<3.6	3.6	<3.3	--	--	--	--
Silver	mg/kg	0.79	--	<1.3	<0.57	<1.4	<1.4	<1.3	--	--	--	--
Sodium	mg/kg	110	--	--	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	<1.3	<1.1	<1.4	<1.4	<1.3	--	--	--	--
Vanadium	mg/kg	62	--	32	28.2	35	32	26	--	--	--	--
Zinc	mg/kg	110	--	51	40	74	52	57	--	--	--	--
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	0.524	--

TABLE E-6.2 HVS-2B-2 PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0147**	**HZBS0148**	**HZBS0165**	**ISWC0086**	**ISWC0087**	**ISWC0088**	**ISWC0089**
		Sample Name:		HZBS0147S001	HZBS0148S001	HZBS0165S001	ISWC0086S001	ISWC0087S001	ISWC0088S001	ISWC0089S001
		Collection Date:		7/15/2009	7/15/2009	7/1/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009
		Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	1.0 - 1.5	0.5 - 1.0	0.5 - 1.0	1.0 - 1.5
		Status		In Place	In Place	In Place	Excavated	Excavated	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT [c]**	**RESULT [c]**	**RESULT [c]**	**RESULT [c]**
METALS										
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--
Antimony	mg/kg	8.7	--	--	--	<0.99 J	<0.88	<0.88	<0.88	<0.88
Arsenic	mg/kg	15	--	3.67	3.59	4.8	5.1	4.5	4.6	4.5
Barium	mg/kg	140	--	--	--	83	81	83	82	81
Beryllium	mg/kg	1.1	--	--	--	0.72	0.66	0.63	0.58	0.63
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1	--	0.319	0.321	<0.2	<0.2	<0.2	0.89	<0.2
Calcium	mg/kg	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	--	--	26	29	27	57	28
Chromium, WET	mg/L	--	--	--	--	--	--	--	0.095	--
Cobalt	mg/kg	21	--	--	--	8	7.8	8	8.1	7.8
Copper	mg/kg	29	29	16.0 J	17.2 J	15	15	15	110	15
Iron	mg/kg	28,000	--	--	--	--	--	--	--	--
Lead	mg/kg	34	34	7.75 J	8.19 J	7.8	6.7	7.2	20	7.3
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--
Manganese	mg/kg	495	--	--	--	--	--	--	--	--
Mercury	mg/kg	0.09	--	--	--	0.0074 J	0.0059 J	<0.0055	0.37	<0.0055
Molybdenum	mg/kg	5.3	--	--	--	0.93 J	<0.2	<0.2	1.1 J	<0.2
Nickel	mg/kg	29	--	--	--	16	14	14	40	15
Potassium	mg/kg	6,400	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	--	--	<1	<1	<1	<1	<1
Silver	mg/kg	0.79	--	--	--	<0.9	<0.8	<0.8	4.7	<0.8
Sodium	mg/kg	110	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	--	--	<0.9	<0.8	<0.8	<0.8	<0.8
Vanadium	mg/kg	62	--	--	--	45	50	49	34	47
Zinc	mg/kg	110	--	--	--	64	61	61	100	60
DIOXINS										
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--

TABLE E-6.2 HVS-2B-2 FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not analyzed / not applicable

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

[b] ISRA SRGs are established for ISRA Constituents of Concern, which include constituents that were detected at concentrations that exceeded NPDES permit limits/benchmarks. 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.

bgs - below ground surface

[c] Waste characterization sample results not validated

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds the Soil Remediation Goal (SRG).

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

R - Rejected value.

SRG - Soil Remediation Goal

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

Outfall 008, HVS-2B
Confirmation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Planned Excavation Area
- Actual Excavation Area
- Previously Excavated Area
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Surface Water Drainage
- Elevation Contour

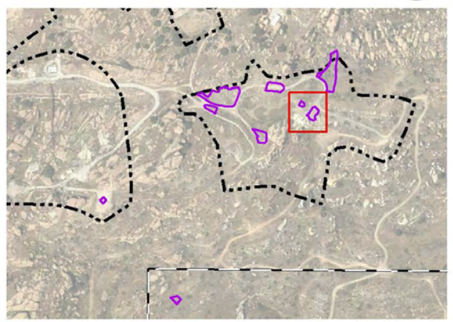
Soil Remediation Goals (SRGs)
Copper = 29 mg/kg
Lead = 34 mg/kg
Dioxins = 3.0 pg/g

- Floor Sample On Hold
- Floor Sample > SRGs
- Floor Sample <= SRGs
- Sidewall Sample On Hold
- Sidewall Sample > SRGs
- Sidewall Sample <= SRGs

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD-TEQ.
2. Sample IDs shown represent ISRA excavation confirmation samples.
3. Copper and Lead SRG is equal to the 2005 background comparison concentration, and SRG for dioxins is approximately 3 times the 2005 background comparison concentration.
4. Aerial imagery from Sage, November 2009.
5. Topographic contours from Sage, November 2009.

Date: November 13, 2009

0 10 20 40 Feet



SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-6.2

Printing Date: March 29, 2010 File: \\uspas1netapp1\DEI\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall 008\Final\008 ISRA_HVS-2B-1_ConfirmationSamplesFinal.mxd

TABLE E-6.3 HVS-2B-1 CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0166**	**HZBS0170**	**HZBS0171**	**HZET0300**	**HZET0300**	**HZET0300**	**HZET0300**	**HZET0301**
		Sample Name:		HZBS0166S001	HZBS0170S001	HZBS0171S001	HZET0300D001	HZET0300S001	HZET0300S001-RWQCB	HZET0300S001-RWQCB	HZET0301S001
		Collection Date:		7/1/2009	7/1/2009	7/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009
		Sample Type:		Sidewall	Sidewall	Sidewall	Floor	Floor	Floor	Floor	Floor
		Sample Depth (feet)[a]:		0.0 - 0.5	1.1 - 1.6	0.5 - 1.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0
		Status:		In Place	In Place	In Place	Excavated	Excavated	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS											
Copper	mg/kg	29	29	15	5	14	1,550 J	362 J	579	430	4.61 J
Lead	mg/kg	34	34	7.9	3.9	12	54.3 J	47.1 J	44.7	70	5.00 J

TABLE E-6.3 HVS-2B-1 CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0166**	**HZBS0170**	**HZBS0171**	**HZET0300**	**HZET0300**	**HZET0301**	**HZET0301**	**HZET0302**
		Sample Name:		HZBS0166S001	HZBS0170S001	HZBS0171S001	HZET0300D001	HZET0300S001	HZET0301S001-RWQCB	HZET0301S001-RWQCB	HZET0302S001
		Collection Date:		7/1/2009	7/1/2009	7/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/15/2009
		Sample Type:		Sidewall	Sidewall	Sidewall	Floor	Floor	Floor	Floor	Sidewall
		Sample Depth (feet)[a]:		0.0 - 0.5	1.1 - 1.6	0.5 - 1.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0	0.8 - 1.0
		Status:		In Place	In Place	In Place	Excavated	Excavated	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS											
Copper	mg/kg	29	29	15	5	14	1,550 J	362 J	3.58	4.8	17.8 J
Lead	mg/kg	34	34	7.9	3.9	12	54.3 J	47.1 J	3.44	4.5	11

TABLE E-6.3 HVS-2B-1 CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0166**	**HZBS0170**	**HZBS0171**	**HZET0300**	**HZET0300**	**HZET0302**	**HZET0303**	**HZET0303**
		Sample Name:		HZBS0166S001	HZBS0170S001	HZBS0171S001	HZET0300D001	HZET0300S001	HZET0302S001-RWQCB	HZET0303S001	HZET0303S001-RWQCB
		Collection Date:		7/1/2009	7/1/2009	7/1/2009	9/1/2009	9/1/2009	9/15/2009	9/15/2009	9/15/2009
		Sample Type:		Sidewall	Sidewall	Sidewall	Floor	Floor	Sidewall	Floor	Floor
		Sample Depth (feet)[a]:		0.0 - 0.5	1.1 - 1.6	0.5 - 1.0	3.5 - 4.0	3.5 - 4.0	0.8 - 1.0	4.0 - 4.5	4.0 - 4.5
		Status:		In Place	In Place	In Place	Excavated	Excavated	In Place	Excavated	Excavated
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS											
Copper	mg/kg	29	29	15	5	14	1,550 J	362 J	16	40.0 J	48
Lead	mg/kg	34	34	7.9	3.9	12	54.3 J	47.1 J	9.9	20.2	24

TABLE E-6.3 HVS-2B-1 CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0166**	**HZBS0170**	**HZBS0171**	**HZET0300**	**HZET0300**	**HZET0304**	**HZET0305**
		Sample Name:		HZBS0166S001	HZBS0170S001	HZBS0171S001	HZET0300D001	HZET0300S001	HZET0304S001	HZET0305S001
		Collection Date:		7/1/2009	7/1/2009	7/1/2009	9/1/2009	9/1/2009	9/29/2009	9/29/2009
		Sample Type:		Sidewall	Sidewall	Sidewall	Floor	Floor	Sidewall	Sidewall
		Sample Depth (feet)[a]:		0.0 - 0.5	1.1 - 1.6	0.5 - 1.0	3.5 - 4.0	3.5 - 4.0	1.8 - 2.0	4.3 - 4.5
		Status:		In Place	In Place	In Place	Excavated	Excavated	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS										
Copper	mg/kg	29	29	15	5	14	1,550 J	362 J	11.4	14.3
Lead	mg/kg	34	34	7.9	3.9	12	54.3 J	47.1 J	7.35	8.31

TABLE E-6.3 CONFIRMATION FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not applicable, not analyzed

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

[a] feet below pre-existing ground surface

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

[c] SRGs are for ISRA COCs. 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.

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds SRG[c]

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

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

RWQCB - Regional Water Quality Control Board split samples.

TABLE E-6.4 HVS-2B-2 CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZET0500**	**HZET0500**	**HZET0501**	**HZET0501**	**HZET0502**	**HZET0502**	**HZET0503**	**HZET0504**
		Sample Name:		HZET0500S001	HZET0500S001-RWQCB	HZET0501S001	HZET0501S001-RWQCB	HZET0502D001	HZET0502S001	HZET0503S001	HZET0504S001
		Collection Date:		9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009
		Sample Type:		Floor	Floor	Sidewall	Sidewall	Floor	Floor	Sidewall	Floor
		Sample Depth (feet)[a]:		5.0 - 5.5	5.0 - 5.5	0.8 - 1.0	0.8 - 1.0	3.5 - 4.0	3.5 - 4.0	2.55 - 2.75	3.0 - 3.5
		Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS											
Arsenic	mg/kg	15	--	4.21	3.9	4.19	4.54	3.43	2.52	4.02	2.95
Cadmium	mg/kg	1	--	0.133 J	0.891	0.247	0.927	0.12 J	0.119 J	0.275	0.131J
Chromium	mg/kg	36.8	--	14.3	--	12.4	14.7	13.3	12.8	22.7	10.9
Copper	mg/kg	29	29	5.94 J	5.24	9.72 J	8.62	7.35 J	6.71 J	11.9 J	4.49 J
Mercury	mg/kg	0.09	--	0.0371	--	0.0647	<0.05	0.0541	0.0459	0.00981 J	0.0311
Nickel	mg/kg	29	--	11.5 J	--	9.7 J	9.43	9.66 J	9.89 J	17.7 J	6.78 J
Silver	mg/kg	0.79	--	1.14	--	0.582	<0.5	0.312	0.24	0.343	0.367

TABLE E-6.4 HVS-2B-2 CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZET0505**	**HZET0506**	**HZET0507**	**HZET0508**	**HZBS0146**	**HZBS0148**
		Sample Name:		HZET0505S001	HZET0506S001	HZET0507S001	HZET0508S001	HZBS0146S001	HZBS0148S001
		Collection Date:		9/3/2009	9/3/2009	9/3/2009	9/29/2009	7/15/2009	7/15/2009
		Sample Type:		Floor	Floor	Sidewall	Sidewall	Sidewall	Sidewall
		Sample Depth (feet)[a]:		5.5 - 6.0	3.6 - 4.1	1.8 - 2.0	1.8 - 2.0	0.0 - 0.5	0.0 - 0.5
		Status:		In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS									
Arsenic	mg/kg	15	--	3.07	5.94	4.42	5.9	3.74	3.59
Cadmium	mg/kg	1	--	0.0728 J	0.12 J	0.3	0.0851 J	0.28	0.321
Chromium	mg/kg	36.8	--	11.4	17.1	25	22.4 J	--	--
Copper	mg/kg	29	29	3.85 J	12.3 J	12.9 J	11.6	12.5 J	17.2 J
Mercury	mg/kg	0.09	--	0.0252	0.0188	0.00846 J	0.0109 J	--	--
Nickel	mg/kg	29	--	6.48 J	12.1 J	19.9 J	13	--	--
Silver	mg/kg	0.79	--	0.289	0.373	0.412	<0.105	--	--

TABLE E-6.4 ALL SITES CONFIRMATION FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not applicable, not analyzed

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

[a] feet below pre-existing ground surface

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

[c] SRGs are for ISRA COCs. 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.

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds SRG[c]

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

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

RWQCB - Regional Water Quality Control Board split samples.

Outfall 008, HVS-2C
Pre-Excavation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Planned Excavation Area
- Previously Excavated Area
- Potential Local Borrow Source
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Elevation Contour
- Sample On Hold

ISRA Constituents of Concern
Copper, Lead, Dioxins

2005 Background Comparison Concentrations
Copper: 29 mg/kg
Lead: 34 mg/kg
Dioxins (TCDD TEQ): 0.87 pg/g

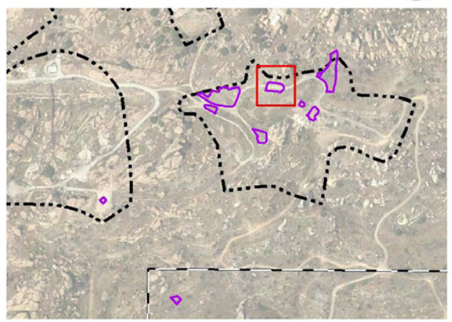
Copper and/or Lead Sample Location (<2 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG

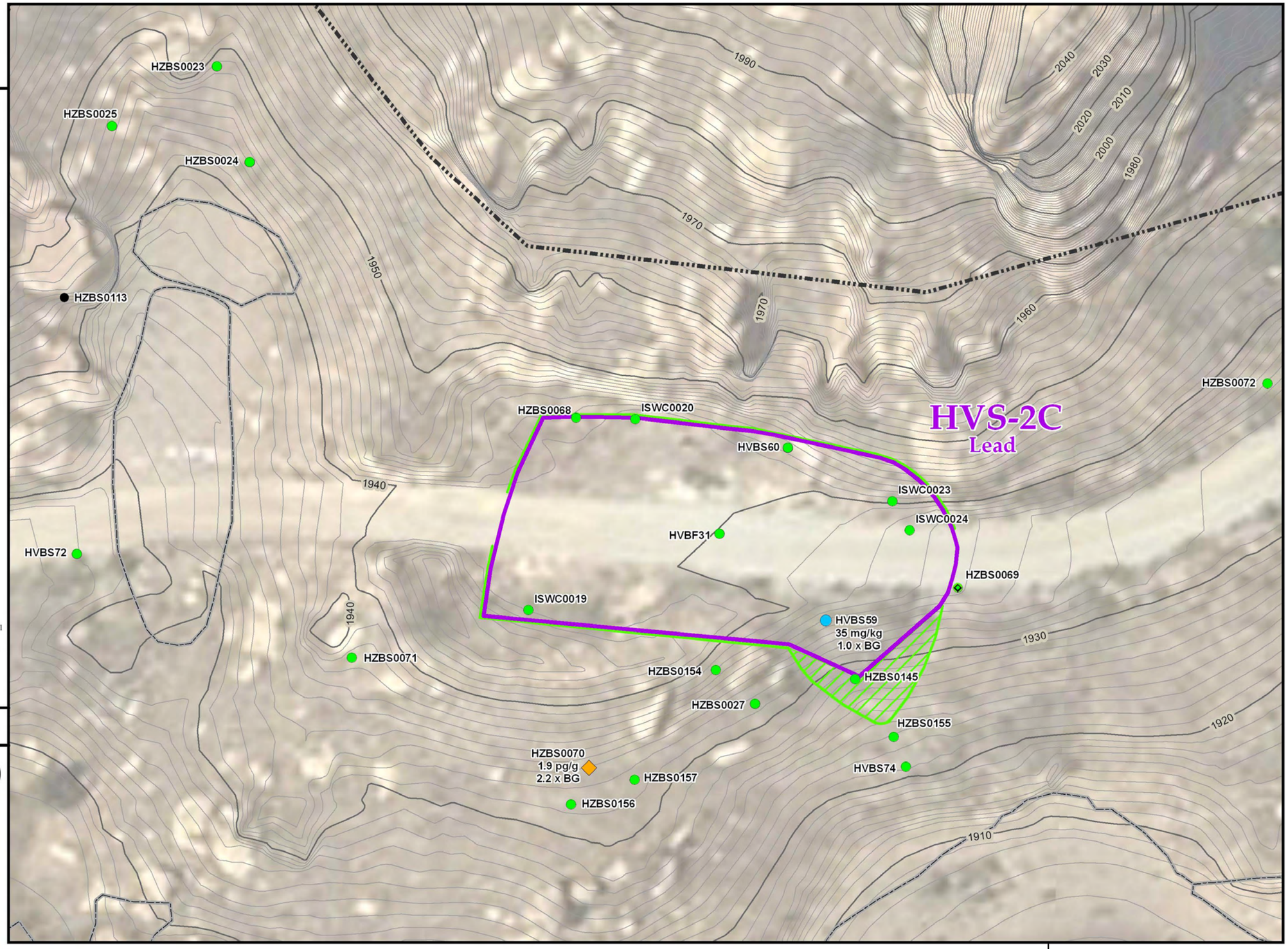
Dioxin Sample Location (<2 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG
- ≥100x BG

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD TEQ
2. Extent of local borrow source generalized and approximate. Actual extent will vary base on final excavation extents, as directed by project engineer.
3. Sample IDs shown represent ISRA data gap, ISRA waste characterization and RCRA RFI samples located in the vicinity of the ISRA area.
4. Aerial imagery from Google Earth, 2007.
5. Topographic contours from Sage, July 2009.

Date: August 24, 2009

0 10 20 40 Feet





SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-7.1

Printing Date: March 29, 2010 File: \\uspas1netapp1\DEI\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall 008\Final\008 ISRA_HVS-2C_PreExcavationSamplesFinal.mxd

TABLE E-7.1 HVS-2C PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		HVBF31	HVBS59	HVBS59	HVBS59	HVBS59	HVBS60	HVBS60	HVBS60	HVBS72	HVBS72	HVBS74	HZBS0023
		Sample Name:		HVBF31S01	RJ169	RJ711	RJ712	RZ711	RJ713	RJ714	RZ713	RJ834	RJ835	HVBS74S01	HZBS0023S001
		Collection Date:		10/4/2006	3/30/2001	10/23/2000	10/23/2000	10/23/2000	10/23/2000	10/23/2000	10/23/2000	11/17/2000	11/17/2000	3/30/2001	7/21/2008
		Sample Depth (feet bgs):		0.0 - 1.0	3.5 - 4.0	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	5.0 - 5.5	0.0 - 0.5	0.5 - 1.0
		Status:		Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS															
Aluminum	mg/kg	20,000	--	20,400	--	7,070	6,410	7,700	7,690	7,020	10,000	11,900	20,700	--	7,450
Antimony	mg/kg	8.7	--	<1.1 J	--	0.26 J	0.42 J	<2	0.33 J	<0.16 J	<2	0.57 J	0.46 J	--	<1 J
Arsenic	mg/kg	15	--	3.8	--	3.3	3	5.3	3.6	3.1	5.7	3.4	5.7	--	3.2
Barium	mg/kg	140	--	63	--	47.3	47.3	51	57.4	56.7	74	49.4 J	59.1 J	--	69.2
Beryllium	mg/kg	1.1	--	0.78	0.5	2.3	2	2.3	0.68	0.53	0.83	0.52 J	0.79 J	0.62	0.49
Boron	mg/kg	9.7	--	3.83	--	<4.4	<4.3	<10	<4.3	<4	<10	<4 J	<4.7 J	--	<5.01
Cadmium	mg/kg	1	--	0.048 J	--	1.7	1.6	2.8	2.7	2.6	--	<0.15	<0.18	--	0.22
Calcium	mg/kg	--	--	--	--	1,640	1,750	--	1,390	1,420	4.8	1,970 J	1,840 J	--	--
Chromium	mg/kg	36.8	--	15	--	14.9	13.9	21	14.3	13.1	18	14.8 J	22.5 J	--	13.3 J
Cobalt	mg/kg	21	--	6.6	--	4.3	4.7	4.8	4.7	4.1	7.2	5.5 J	12.5 J	--	4.6
Copper	mg/kg	29	29	5.4 J	--	15.7	9.4	11	18.7	14.3	25	5.8 J	6.1 J	--	6.9
Iron	mg/kg	28,000	--	--	--	13,900	14,100	--	14,900	14,100	--	16,400	22,500	--	--
Lead	mg/kg	34	34	6.8	4.9 J	32.7	29.1	35	22.1	14.6	18	5.1 J	7.3 J	16 J	11.1
Magnesium	mg/kg	--	--	--	--	3,050	2,910	--	2,870	2,690	--	3140	4070	--	--
Manganese	mg/kg	495	--	--	--	205	209	--	199	187	--	229 J	746 J	--	--
Mercury	mg/kg	0.09	--	0.027	--	0.02	0.02	<0.1	0.01	0.01	<0.1	<0.02	<0.02	--	0.0083 J
Molybdenum	mg/kg	5.3	--	0.59	--	<10 J	<10 J	1.4	<10 J	<10 J	<1	<10 J	<10 J	--	0.31
Nickel	mg/kg	29	--	8.2 J	--	9.4	8.2	12	8.6	7.5	13	9.1 J	12.5 J	--	8.7
Potassium	mg/kg	6,400	--	--	--	2,340	2,280	--	2,290	2,220	--	2,390	2,940	--	--
Selenium	mg/kg	0.655	--	0.24	--	<1.8	<1.7	<5	<1.7	<1.6	<5	<1.6	<1.9	--	<0.486
Silver	mg/kg	0.79	--	0.073	--	<4.5 J	<4.5 J	<2	<4.5 J	<4.5 J	<2	<4.5 J	<4.5 J	--	0.093 J
Sodium	mg/kg	110	--	--	--	59.8	51	--	56.7	63.2	--	113	96.3	--	--
Thallium	mg/kg	0.46	--	0.29 J	--	<0.23 J	0.65 J	<5	0.71 J	<0.21 J	<5	<1.8 J	<1.1 J	--	<0.26
Vanadium	mg/kg	62	--	28	--	20.7	20.4	23	18.7	17.2	23	27.7 J	35.5 J	--	25.2
Zinc	mg/kg	110	--	32 J	--	135	137	130	136	140	150	41.7 J	47.6 J	--	51.1
DIOXINS															
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	--	--	--	--	--

TABLE E-7.1 HVS-2C PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0023**	**HZBS0024**	**HZBS0024**	**HZBS0025**	**HZBS0027**	**HZBS0068**	**HZBS0069**	**HZBS0070**	**HZBS0071**
		Sample Name:		HZBS0023S002	HZBS0024S001	HZBS0024S001SP	HZBS0025S001	HZBS0027S001	HZBS0068S001	HZBS0069S001	HZBS0070S001	HZBS0071S001
		Collection Date:		7/21/2008	7/21/2008	7/21/2008	7/21/2008	7/22/2008	2/25/2009	2/25/2009	2/24/2009	2/25/2009
		Sample Depth (feet bgs):		3.0 - 3.5	0.5 - 1.0	0.5 - 1.0	0.5 - 1.0	0.5 - 1.0	0.0 - 0.5	0.0 - 0.2	0.0 - 0.5	0.0 - 0.5
		Status:		In Place	In Place	In Place	In Place	In Place	Excavated	In Place	In Place	In Place
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Aluminum	mg/kg	20,000	--	9,260	7,520	11,200	7,480	8,840 J	--	--	--	--
Antimony	mg/kg	8.7	--	<1 J	<0.303 J	<0.117	<1.01 J	<0.309	--	--	--	--
Arsenic	mg/kg	15	--	1.8	4.1	5.16	2.7	3.3	--	--	--	--
Barium	mg/kg	140	--	41.5	46.6	41	59.8	61.3	--	--	--	--
Beryllium	mg/kg	1.1	--	0.41 J	0.48 J	0.497 J	0.45 J	0.47	--	--	--	--
Boron	mg/kg	9.7	--	<5.01	<4.88	<1.83 J	<5.05	<4.98	--	--	--	--
Cadmium	mg/kg	1	--	0.052 J	0.1 J	<0.0696 J	0.22	0.24	0.4	0.13 J	0.22 J	0.4
Calcium	mg/kg	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/kg	36.8	--	13.2 J	14.1 J	15	11.7 J	15.9 J	--	--	--	--
Cobalt	mg/kg	21	--	3.3	3.5	3.11	3.9	4.9	--	--	--	--
Copper	mg/kg	29	29	4.9	5.8	5.51	6	7.4 J	--	6.32	--	--
Iron	mg/kg	28,000	--	--	--	--	--	--	--	--	--	--
Lead	mg/kg	34	34	3.6	6.2	4.49	15.4	11.3 J	11.7	6.7	13.2	9.4
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/kg	495	--	--	--	--	--	--	--	--	--	--
Mercury	mg/kg	0.09	--	0.0099 J	0.011 J	<0.0116 J	0.012 J	0.011 J	--	--	--	--
Molybdenum	mg/kg	5.3	--	<0.1	0.18	<0.443 J	0.32	0.34	--	--	--	--
Nickel	mg/kg	29	--	5.1	7.1	7.39	7.5	10.3	--	--	--	--
Potassium	mg/kg	6,400	--	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	<0.522	<0.507	<0.459 J	<0.501	<0.511	--	--	--	--
Silver	mg/kg	0.79	--	0.046 J	0.059 J	0.385 J	0.37	0.053 J	--	--	--	--
Sodium	mg/kg	110	--	--	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	<0.22	<0.22	<0.247	<0.21	<0.26	--	--	--	--
Vanadium	mg/kg	62	--	21.5	24.7	25.1	22.5	28.4 J	--	--	--	--
Zinc	mg/kg	110	--	36.9	44.4	40.2	46.3	45.5 J	67.9	47.9	51.3	45.6
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	0.3227	1.936	--

TABLE E-7.1 HVS-2C PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0071**	**HZBS0145**	**HZBS0154**	**HZBS0155**	**HZBS0156**	**HZBS0157**	**ISWC0019**	**ISWC0020**	**ISWC0023**
		Sample Name:		HZBS0071S001SP	HZBS0145S001	HZBS0154S001	HZBS0155S001	HZBS0156S001	HZBS0157S001	ISWC0019S001	ISWC0020S001	ISWC0023S001
		Collection Date:		2/25/2009	7/14/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009	7/1/2009
		Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5	0.5 - 1.0	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.5 - 2.0	0.25 - 0.75	0.0 - 0.25
		Status:		In Place	In Place	In Place	In Place	In Place	In Place	Excavated	Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT [c]**	**RESULT [c]**	**RESULT [c]**
METALS												
Aluminum	mg/kg	20,000	--	--	--	--	--	--	--	--	--	--
Antimony	mg/kg	8.7	--	--	--	0.95 R	2 R	0.91 R	0.99 R	<0.88	<0.88 M2	<0.88
Arsenic	mg/kg	15	--	--	--	4.2	14	4.6	4.7	3.7	3.8	4.1
Barium	mg/kg	140	--	--	--	51	76	51	62	45	120	100
Beryllium	mg/kg	1.1	--	--	--	0.63	1.1 J	0.57	0.7	0.64	0.72	0.53
Boron	mg/kg	9.7	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/kg	1	--	0.38	0.492	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2
Calcium	mg/kg	--	--	--	--		--	--	--	--	--	--
Chromium	mg/kg	36.8	--	--	--	14	30	17	17	12	13	14
Cobalt	mg/kg	21	--	--	--	3.6	9	4	4.3	3.3	6.4	3.4
Copper	mg/kg	29	29	--	--	6.8	26	5.5	7	5.6 B	7.6 B	8.3
Iron	mg/kg	28,000	--	--	--	--	--	--	--	--	--	--
Lead	mg/kg	34	34	11	17.3 J	9.3	27	5.1	5.7	4.2	7.2	16
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/kg	495	--	--	--	--	--	--	--	--	--	--
Mercury	mg/kg	0.09	--	--	--	0.014 J	0.02 J	0.016 J	0.019 J	0.012 J	0.01 J	0.013 J
Molybdenum	mg/kg	5.3	--	--	--	0.83 J	1.6 J	0.75 J	0.78 J	0.76 J	0.82 J	0.91 J
Nickel	mg/kg	29	--	--	--	8.3	21	8.2	9.9	6.9	8.3	9.1
Potassium	mg/kg	6,400	--	--	--	--	--	--	--	--	--	--
Selenium	mg/kg	0.655	--	--	--	<1	<2	<1	<1	<1	<1	<1
Silver	mg/kg	0.79	--	--	--	<0.8	<1.8	<0.8	<0.9	<0.8	<0.8	<0.8
Sodium	mg/kg	110	--	--	--	--	--	--	--	--	--	--
Thallium	mg/kg	0.46	--	--	--	<0.9	<1.8	<0.8	<0.9	<0.8	<0.8	<0.8
Vanadium	mg/kg	62	--	--	--	26	50	27	29	23	23	24
Zinc	mg/kg	110	--	45 J	65.1	42	81	31	39	37	43	52
DIOXINS												
TCDD TEQ	pg/g	0.87	3.0	--	--	--	--	--	--	--	--	--

TABLE E-7.1 HVS-2C PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**ISWC0024**
		Sample Name:		ISWC0024S001
		Collection Date:		7/1/2009
		Sample Depth (feet bgs):		0.5 - 1.1
		Status:		Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT [c]**
METALS				
Aluminum	mg/kg	20,000	--	--
Antimony	mg/kg	8.7	--	<0.88
Arsenic	mg/kg	15	--	4.5
Barium	mg/kg	140	--	49
Beryllium	mg/kg	1.1	--	0.63
Boron	mg/kg	9.7	--	--
Cadmium	mg/kg	1	--	<0.2
Calcium	mg/kg	--	--	--
Chromium	mg/kg	36.8	--	15
Cobalt	mg/kg	21	--	3.3
Copper	mg/kg	29	29	6.2 B
Iron	mg/kg	28,000	--	--
Lead	mg/kg	34	34	4.3
Magnesium	mg/kg	--	--	--
Manganese	mg/kg	495	--	--
Mercury	mg/kg	0.09	--	0.0089 J
Molybdenum	mg/kg	5.3	--	0.67 J
Nickel	mg/kg	29	--	8.1
Potassium	mg/kg	6,400	--	--
Selenium	mg/kg	0.655	--	<1
Silver	mg/kg	0.79	--	<0.8
Sodium	mg/kg	110	--	--
Thallium	mg/kg	0.46	--	<0.8
Vanadium	mg/kg	62	--	26
Zinc	mg/kg	110	--	40
DIOXINS				
TCDD TEQ	pg/g	0.87	3.0	--

TABLE E-7.1 HVS-2C FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not analyzed / not applicable

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

[b] ISRA SRGs are established for ISRA Constituents of Concern, which include constituents that were detected at concentrations that exceeded NPDES permit limits/benchmarks. 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.

B - Analyte was detected in the associated Method Blank.

bgs - below ground surface

[c] Waste characterization sample results not validated

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds SRG[c]

M2 - The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

SRG - Soil Remediation Goal

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

R - Result has been rejected by the validation team.

Outfall 008, HVS-2C
Confirmation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Planned Excavation Area
- Actual Excavation Area
- Previously Excavated Area
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Elevation Contour

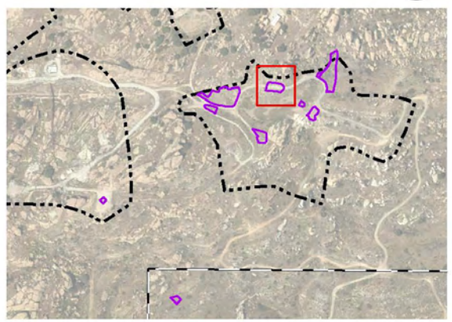
Soil Remediation Goals (SRGs)
Copper = 29 mg/kg
Lead = 34 mg/kg
Dioxins = 3.0 pg/g

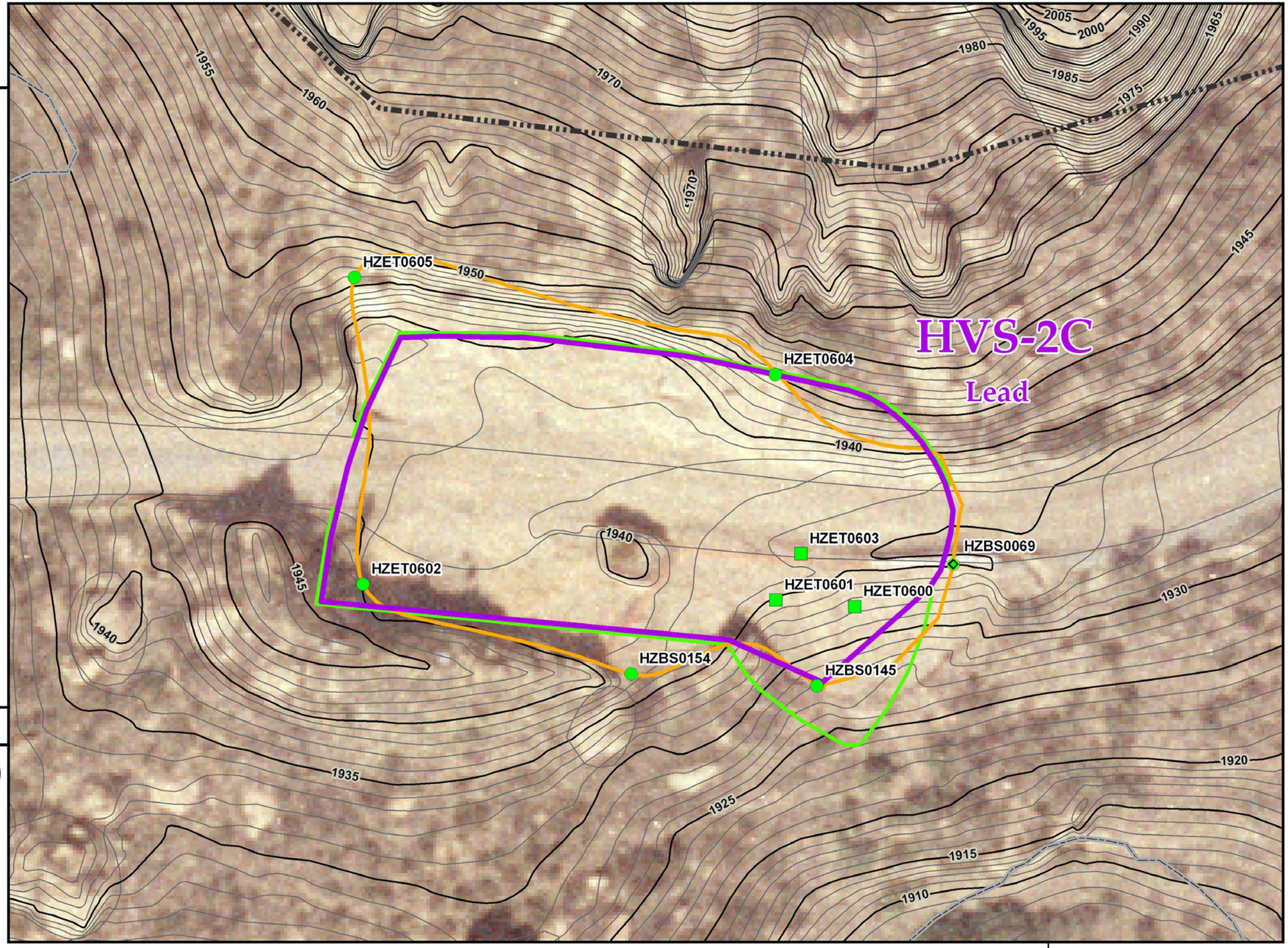
- Floor Sample On Hold
- Floor Sample > SRGs
- Floor Sample <= SRGs
- Sidewall Sample On Hold
- Sidewall Sample > SRGs
- Sidewall Sample <= SRGs

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD-TEQ.
2. Sample IDs shown represent ISRA excavation confirmation samples.
3. Copper and Lead SRG is equal to the 2005 background comparison concentration, and SRG for dioxins is approximately 3 times the 2005 background comparison concentration.
4. Aerial imagery from Sage, November 2009.
5. Topographic contours from Sage, November 2009.

Date: November 13, 2009

0 7.5 15 30 Feet





SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-7.2

Printing Date: March 29, 2010 File: \\uspas1netapp1\DEI\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall 008\Final\008 ISRA_HVS-2C_ConfirmationSamplesFinal.mxd

TABLE E-7.2 HVS-2C CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZET0600**	**HZET0600**	**HZET0600**	**HZET0601**	**HZET0602**	**HZET0602**	**HZET0603**	**HZET0604**	**HZET0605**
		Sample Name:		HZET0600D001	HZET0600S001	HZET0600S001-RWQCB	HZET0601S001	HZET0602S001	HZET0602S001-RWQCB	HZET0603S001	HZET0604S001	HZET0605S001
		Collection Date:		9/21/2009	9/21/2009	9/21/2009	9/21/2009	9/21/2009	9/21/2009	9/21/2009	9/21/2009	9/21/2009
		Sample Type:		Floor	Floor	Floor	Floor	Sidewall	Sidewall	Floor	Sidewall	Sidewall
		Sample Depth (feet)[a]:		1.75 - 2.25	1.75 - 2.25	1.75 - 2.25	1.5 - 2.0	1.8 - 2.0	1.8 - 2.0	1.75 - 2.25	0.0 - 0.2	0.3 - 0.5
		Status:		In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
METALS												
Cadmium	mg/kg	1	--	0.113 J	0.0846 J	<0.5	0.146 J	0.109 J	<0.5	0.173 J	0.153 J	0.216
Lead	mg/kg	34	34	5.45 J	4.39 J	6.4	6.03 J	4.36 J	5.3	6.64 J	8.00 J	10.1 J
Zinc	mg/kg	110	--	53	47.9	51	46.6	38.8	44	48.8	51.9	45.1

TABLE E-7.2 HVS-2C CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0069**	**HZBS0145**	**HZBS0154**
		Sample Name:		HZBS0069S001	HZBS0145S001	HZBS0154S001
		Collection Date:		2/25/2009	7/14/2009	7/1/2009
		Sample Type:		Sidewall	Sidewall	Sidewall
		Sample Depth (feet)[a]:		0.0 - 0.2	0.0 - 0.5	0.5 - 1.0
		Status:		In Place	In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**	**RESULT**
METALS						
Cadmium	mg/kg	1	--	0.13 J	0.492	<0.2
Lead	mg/kg	34	34	6.7	17.3 J	9.3
Zinc	mg/kg	110	--	47.9	65.1	42

TABLE E-7.2 CONFIRMATION FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not applicable, not analyzed

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

[a] feet below pre-existing ground surface

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

[c] SRGs are for ISRA COCs. 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.

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds SRG[c]

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

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

RWQCB - Regional Water Quality Control Board split samples.

Outfall 008, HVS-2D
Pre-Excavation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Previously Excavated Area
- Potential Local Borrow Source
- Preliminary ISRA Evaluation Area
- Surface Water Divide
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Elevation Contour
- Sample On Hold

ISRA Constituents of Concern
Copper, Lead, Dioxins

2005 Background Comparison Concentrations
Copper: 29 mg/kg
Lead: 34 mg/kg
Dioxins (TCDD TEQ): 0.87 pg/g

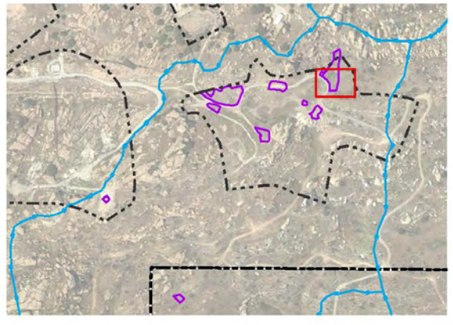
Copper and/or Lead Sample Location (<7 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG

Dioxin Sample Location (<2 feet bgs)
- ≤ Background (BG)
- >BG and <2x BG
- ≥2x BG and <10x BG
- ≥10x BG and <100x BG
- ≥100x BG

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD TEQ
2. Extent of local borrow source generalized and approximate. Actual extent will vary base on final excavation extents, as directed by project engineer.
3. Sample IDs shown represent ISRA data gap, ISRA waste characterization and RCRA RFI samples located in the vicinity of the ISRA area.
4. Aerial imagery from Google Earth, 2007.
5. Topographic contours from Sage, July 2009.

Date: August 24, 2009

0 10 20 40 Feet



HZBS0074
HZBS0137
1950
HZBS0159
HZBS0136
HZBS0138
51 mg/kg
1.5 x BG
ISWC0081
ISWC0080
1940
ISWC0079
HZBS0175
HZBS0174
ISWC0078
HZBS0135
HZBS0173
HZBS0133
41 mg/kg
1.15 x BG
ISWC0028
HVBF33
HZBS0073
HZBS0096
HZBS0028
44 mg/kg
1.3 x BG
HZBS0097
HZBS0134
49 mg/kg
1.4 x BG
HZBS0132
1920
HZBS0158
HVS-2A
HVS-2D
Lead, Dioxin
ISWC0077
HVBS33
40 mg/kg
1.18 x BG
HZBS0082
HZBS0085
Pb: 42 mg/kg
1.23 x BG
Dioxins: 2.96 pg/g
3.4 x BG
1910
HZBS0161
HZBS0131
39 mg/kg
1.15 x BG
HZBS0029
HZBS0172
1930
HZBS0130
HZBS0171
HZBS0086
HZBS0129
1940
HZBS0084
HVS-2B-1

SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-8.1

Printing Date: March 31, 2010 File: \\Uspas1netapp1\dei\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall008\ConfirmationFigs\Final\008 ISRA_HVS-2D_PreExcavationSamplesFinal.mxd

TABLE E-8.1 HVS-2D PRE-EXCAVATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZBS0085**	**HZBS0085**
		Sample Name:		HZBS0085S001	HZBS0085S001SP
		Collection Date:		2/25/2009	2/25/2009
		Sample Depth (feet bgs):		0.0 - 0.5	0.0 - 0.5
		Status:		Excavated	Excavated
ANALYTE	**UNITS**	**BACKGROUND[a]**	**ISRA SRG[b]**	**RESULT**	**RESULT**
METALS					
Arsenic	mg/kg	15	--	4	5.4
Cadmium	mg/kg	1	--	0.37	0.48
Copper	mg/kg	29	29	26.2	17 J
Lead	mg/kg	34	34	28.9	42
DIOXINS					
TCDD TEQ	pg/g	0.87	3	2.96	--

TABLE E-8.1 HVS-2D FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not analyzed / not applicable

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

[b] ISRA SRGs are established for ISRA Constituents of Concern, which include constituents that were detected at concentrations that exceeded NPDES permit limits/benchmarks. 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.

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

bgs -below ground surface

Grey highlighted cells indicate concentration exceeds the Soil Remediation Goal (SRG).

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

pg/g - picograms per gram

SRG - Soil Remediation Goal

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

Outfall 008, HVS-2D
Confirmation Sample Results

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Actual Excavation Area
- Planned Excavation Area
- Excavation Edge Planned to be Graded to Reestablish Pre-Excavation Drainage Pattern
- Elevation Contour

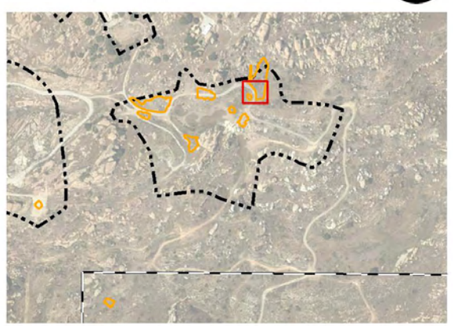
Soil Remediation Goals (SRGs)
Copper = 29 mg/kg
Lead = 34 mg/kg
Dioxins = 3.0 pg/g

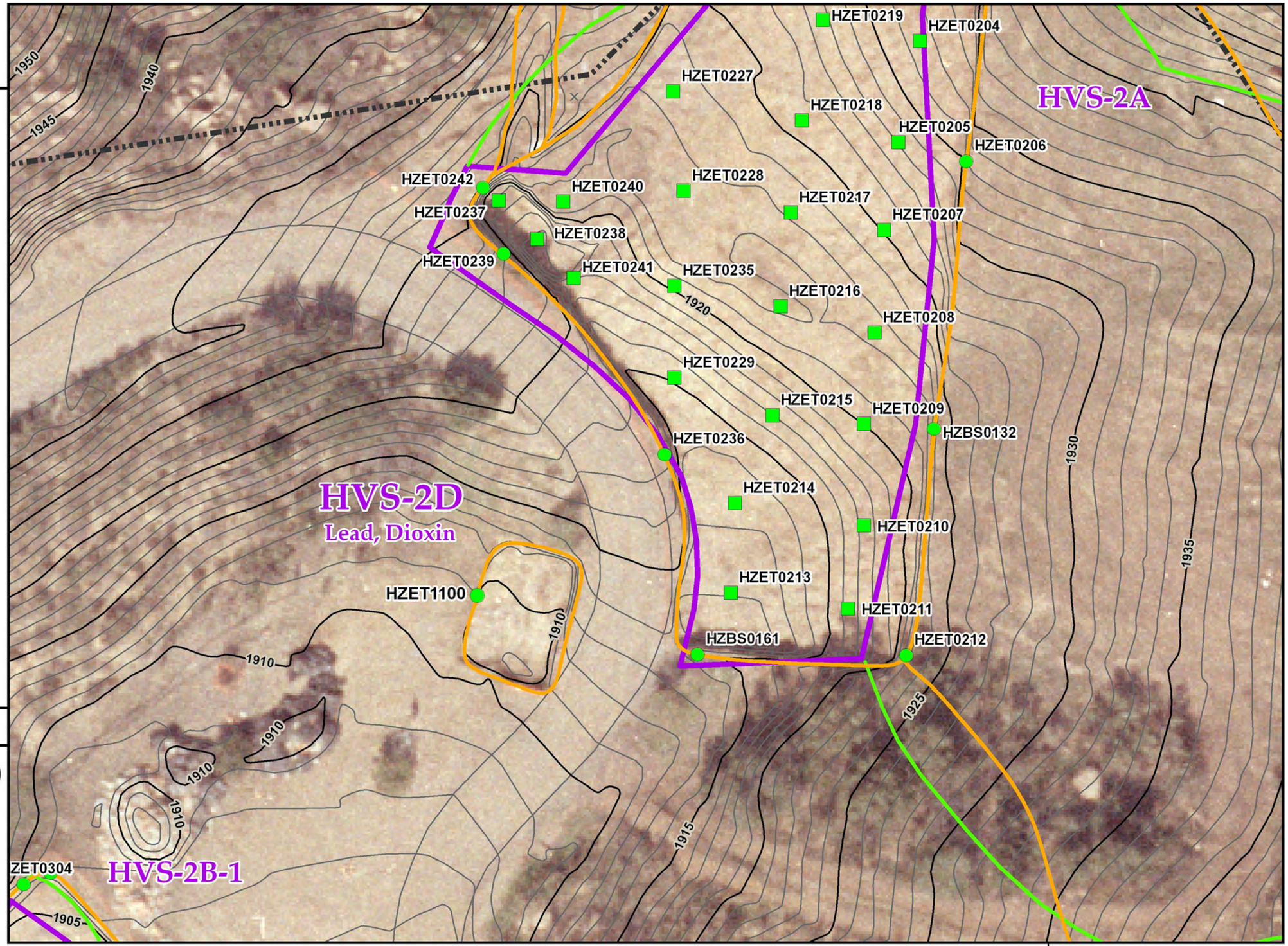
- Floor Sample On Hold
- Floor Sample > SRGs
- Floor Sample <= SRGs
- Sidewall Sample On Hold
- Sidewall Sample > SRGs
- Sidewall Sample <= SRGs

Note:
1. Dioxin represents the sum of 17 dioxin/furan congener results adjusted for toxicity, normalized to 2,3,7,8-TCDD TEQ.
2. Sample IDs shown represent ISRA excavation confirmation samples.
3. Copper and Lead SRG is equal to the 2005 background comparison concentration, and the SRG for dioxins is approximately 3 times the 2005 background comparison concentration.
4. Aerial imagery from Sage, November 2009.
5. Topographic contours from Sage, November 2009.

Date: November 13, 2009

0 10 20 40 Feet





SANTA SUSANA FIELD LABORATORY

MWH FIGURE E-8.2

Printing Date: March 29, 2010 File: \\uspas1netapp1\DEI\rocketdyne gis\MasterGISFiles\ISRA_Projects\ISRA_MXD\Outfall 008\Final\008 ISRA_HVS-2D_ConfirmationSamplesFinal.mxd

TABLE E-8.2 HVS-2D CONFIRMATION SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:		**HZET1100**	**HZET1100**
		Sample Name:		HZET1100S001	HZET1100S001-RWQCB
		Collection Date:		10/19/2009	10/19/2009
		Sample Type:		Sidewall	Sidewall
		Sample Depth (feet)[a]:		1.0 - 1.5	1.0 - 1.5
		Status:		In Place	In Place
ANALYTE	**UNITS**	**Background [b]**	**ISRA SRG[c]**	**RESULT**	**RESULT**
METALS					
Lead	mg/kg	34	34	4.63 J	6.1
DIOXINS					
TCDD TEQ	pg/g	0.87	3	0.0255	0.369

TABLE E-8.2 CONFIRMATION FOOTNOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not applicable, not analyzed

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

[a] feet below pre-existing ground surface

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

[c] SRGs are for ISRA COCs. 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.

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 World Health Organization (WHO) toxic equivalency factor (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 not quantified (DNQ) as specified in the NPDES permit.

Grey highlighted cells indicate concentration exceeds SRG[c]

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

P - Preliminary data, data has not been validated

pg/g - picograms per gram

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

RWQCB - Regional Water Quality Control Board split samples.