WASTE CHARACTERIZATION: IN-SITU SOIL LOCATED AT ISRA OUTFALL 009 PLANNED EXCAVATION IEL-2

Introduction

This report presents supporting detailed information for the April 28 - 30, 2010 in-situ characterization of prospective soil wastes from planned ISRA excavations in SSFL Area I, near the former Equipment Laboratory facility.

Background

In-situ characterization of soil destined to be excavated from designated locations in SSFL Area I in accordance with the ISRA Workplan was performed. A step-by-step approach was followed to accomplish characterization of the soil prior to excavation. The first step was to review available information regarding historical area usage and existing analytical data from past soil sampling in the applicable SSFL Area I locations. The objective was to identify all substances that could have an impact on the determination of whether soil in each planned excavation footprint was hazardous or not.

The next step was to develop a random sampling plan for each of the planned excavation footprints to determine whether any of the identified substances are present at concentrations that require further investigation. An evaluation of the results of the initial random sampling was performed to determine whether the data was adequate for waste characterization based on the exhibited variance of any detected analytes and the relative difference between detected concentrations and regulatory thresholds. The guidelines presented in U.S. EPA SW-846 are followed in evaluating the adequacy of sampling and the application of analytical results to regulatory thresholds. Soil was characterized non-hazardous when analyte concentrations among the samples exhibited a reasonably small variance and there was satisfactory margin between the mean of the samples and applicable regulatory thresholds. Otherwise, additional samples were collected and subjected to analysis or the soil was characterized as hazardous. Statistical analyses described in SW-846 are performed as necessary to determine minimum sample point requirements and the upper confidence levels of analytical results.

The review of historical information and existing analytical data relevant to planned excavation IEL-2 was based partly on the Group 1A RFI results. Evaluation of these data and other sources of relevant information, including recent sampling conducted specifically for ISRA, suggested that Regulated Metals, Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC), Polychlorinated Biphenyls (PCB), and Corrosivity should be addressed in the IEL-2 excavation footprint. A random sampling plan was developed for collection of Eight (8) samples from the planned excavation footprint, taking into account the relatively small area to be excavated. The samples were analyzed for CAM 17 metals, VOCs, SVOCs, PCBs, and pH. All samples were collected, contained, and handled according to field practice requirements in SW-846.

Results

Analytical results for the IEL-2 planned excavation area are presented in GEL Laboratories reports 251962 issued on 5/12/10, 252093 issued on 5/12/10 and 252781 issued on 5/19/10. Regulated Metals were below 10-Times their respective California Soluble Threshold Limits (STLC) in all cases, with the exception of one sample that exhibited Lead at 62.1 parts per million (ppm). This is slightly above the 50 ppm 10X STLC threshold. The Lead concentrations in 6 of the remaining 7 samples ranged from 3.99 ppm to 11.7 ppm. Lead was detected at

45.3 ppm in the final sample. Subsequent analysis of the elevated sample, as required, by the California Waste Extraction Test (WET) for leaching properties resulted in a concentration of 5.31 milligrams per liter (mg/L). This is above the California 5 mg/L STLC hazardous waste limit. However, the mean of the total Lead concentrations for all of the samples is well below applicable regulatory thresholds.

Several samples exhibited very low levels of VOCs, including 1,1,1-Trichloroethane (TCA) at a maximum concentration of 0.0014 ppm; Methylene Chloride at a maximum concentration of 0.002 ppm; Styrene at a maximum concentration of 0.00034 ppm; Toluene at a maximum concentration of 0.00269 ppm, and Tetrachloroethylene (PCE) at a maximum concentration of 0.0007 ppm. Trichloroethylene (TCE) was detected in all samples, with concentrations ranging from 0.00145 ppm to a maximum concentration of 0.0159 ppm. TCA, PCE, and TCE are known to have been used at various times as degreasing solvents at the former Equipment Laboratory. The federal Resource Conservation and Recovery Act (RCRA) governs "Listed" spent solvent wastes, including PCE, TCE, and TCA, as hazardous wastes (F001 and F002). In addition, under the U.S. EPA's "contained-in policy," environmental media wastes contaminated with Listed wastes are considered to be hazardous, regardless of the contaminant concentration.

Some SVOCs were detected in the soil samples from IEL-2, none of which were above the parts per billion level. Specific hazardous waste thresholds have been established in the regulations for only a small number of SVOCs. There were no exceedances of any established limits. Furthermore, none of the detected SVOCs exceeded U.S. EPA Region IX "Preliminary Remediation Goals" (PRG) values for residential soils. The MDLs of non-detected SVOCs were also below the PRG thresholds.

PCBs, in the form of Aroclors 1254 and 1260, were detected in five of the samples. In no case did any of the detected Aroclors exceed an individual concentration of 1.56 ppm. One sample contained a cumulative concentration of the 2 Aroclors at 2.9 ppm. Different Aroclors may contain some of the same PCB congeners, resulting in "double-counting" when simply adding Aroclor concentrations. However, even so, the result is far below the California 10X STLC and the federal Toxic Substances Control Act (TSCA) thresholds, which are both at 50 ppm.

Determination

According to analytical results and generator knowledge, the soil in the planned excavation footprint of SSFL Area I IEL-2:

Is a Listed Waste - F001 and F002 (analytical results)
Is Not ignitable (generator knowledge)
Is Not corrosive (generator knowledge)
Is Not reactive (generator knowledge)
Is Not toxic (analytical results and generator knowledge)
- Is Not Extremely or Acutely Hazardous Waste
- Does not exceed any RCRA or Title 22 characteristic thresholds
- Is Not subject to the Prop. 65 listing if it is applied to 22 CCR 66261.24(a)(7)
- Is Not subject to Title 22 Appendix X list
- Is Not known by experience or testing to pose a hazard to human health or environment because of its carcinogenicity, acute toxicity, chronic toxicity, bio-accumulative properties, or persistence in the environment.

The soil in IEL-2 is HAZARDOUS.

Outfall 009
Waste Characterization
Sample Locations for IEL-2

Base Map Legend

- Administrative Area Boundary
- RFI Site Boundary
- Report Group Boundary
- NPDES Outfall
- A/C Paving
- Drainage
- Non Jurisdictional Surface Water Pathway
- Surface Water Divide
- Elevation Contour

Base Map Legend

- ISRA Excavation Boundary
- Waste Characterization Sample Location

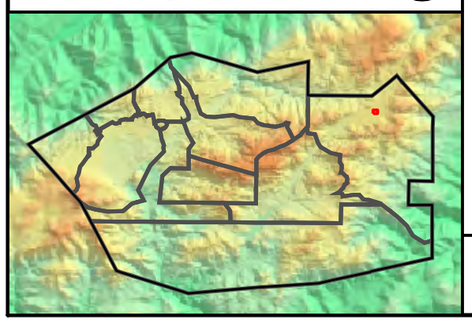
Note:

1. Sample locations and depths were randomly selected. The 3ft x 3ft grid used in the sample location selection process is shown.
2. Aerial imagery from Google Earth, 2010.
3. Topographic contours from Lidar data, 2008.

Document: ISRA_Plots_SP_IEL-2_SampleLocations_062110_WC.mxd Date: Jun 21, 2010

1 inch = 15 feet

0 15 30 Feet



MWH

SANTA SUSANA FIELD LABORATORY

FIGURE 1

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

WASTE CHARACTERIZATION SAMPLE RESULTS – IEL-2
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**ILWC0005**	**ILWC0006**	**ILWC0007**	**ILWC0008**	**ILWC0009**	**ILWC0010**	**ILWC0011**	**ILWC0012**
				Sample Name:		ILWC0005S001	ILWC0006S001	ILWC0007S001	ILWC0008S001	ILWC0009S001	ILWC0010S001	ILWC0011S001	ILWC0012S001
				Collection Date:		4/30/2010	4/28/2010	4/30/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010
				Sample Depth (feet):		5.0 - 5.5	5.0 - 5.5	3.0 - 3.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	2.0 - 2.5
ANALYTE	**UNITS**	**TTLC**	**WET Leachate Testing Trigger[a]**	**TCLP Leachate Testing Trigger[b]**	**STLC**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
METALS													
Antimony	mg/kg	500	150	--	--	0.0741 J	0.132 J	0.0773 J	0.134 J	0.0886 J	0.142 J	0.111 J	0.129 J
Arsenic	mg/kg	500	50	100	--	9.9	1.54	10.2	10.2	9.65	6.93	10.2	6.39
Barium	mg/kg	10,000	1,000	2,000	--	68	126	76.1	74.2	93.6	56.2	77.4	77.2
Beryllium	mg/kg	75	7.5	--	--	0.563	0.125	0.416	0.575	0.485	0.376	0.537	0.45
Cadmium	mg/kg	100	10	20	--	0.614	0.58	5.14	2.67	0.317	0.546	0.16	0.182
Chromium	mg/kg	500	50	100	--	17.9	38.5	37.3	21.7	13.8	13.7	14.6	13.8
Cobalt	mg/kg	8,000	800	--	--	4.7	5.62	4.89	4.15	4.77	3.54	4.22	4.69
Copper	mg/kg	2,500	250	--	--	9.76	17.2	29.7	18.2	7.94	8.85	6.94	7.42
Lead	mg/kg	1,000	50	100	--	62.1	6.7	45.3	6.51	6.85	11.7	5.3	3.99
Lead, WET	mg/L	--	--	--	5	5.31	--	--	--	--	--	--	--
Mercury	mg/kg	20	2	4	--	0.748	0.0227 J	0.575	0.0131 J	0.0303 J	0.206	0.0246 J	<0.011
Molybdenum	mg/kg	3,500	3,500	--	--	0.879	0.28	1.53	0.587	0.752	0.523	0.522	0.465
Nickel	mg/kg	2,000	200	--	--	10.7	7.28	15.1	20.1	9.68	8.71	9.38	10.5
Selenium	mg/kg	100	10	20	--	0.0791 J	<0.0392	0.0641 J	0.0835 J	0.127 J	0.0716 J	0.0776 J	0.0809 J
Silver	mg/kg	500	50	100	--	0.0823 J	0.0207 J	0.349	0.0768 J	0.069 J	0.0902 J	0.0456 J	0.0316 J
Thallium	mg/kg	700	70	--	--	0.178	0.197	0.158	0.221	0.202	0.15	0.212	0.203
Vanadium	mg/kg	2,400	240	--	--	24.9	34.5	21	27.8	28.4	19.1	25.9	22.5
Zinc	mg/kg	5,000	2,500	--	--	53.2	75.8	90.2	68.6	64.6	54.3	51.8	51.9
GENERAL CHEMISTRY													
pH	SU	--	--	--	--	7.28 H	5.92 H	6.17 H	4.7 H	8.26 H	8.46 H	7.28 H	6.35 H
PCBs													
Aroclor 1016	ug/kg	50,000	50,000	--	--	<66.3 {<22.1}	<3.33 {<1.11}	<3.32 {<1.1}	<3.33 {<1.11}	<33.3 {<11.1}	<3.33 {<1.11}	<16.7 {<5.55}	<3.33 {<1.11}
Aroclor 1221	ug/kg	50,000	50,000	--	--	<66.3 {<22.1}	<3.33 {<1.11}	<3.32 {<1.1}	<3.33 {<1.11}	<33.3 {<11.1}	<3.33 {<1.11}	<16.7 {<5.55}	<3.33 {<1.11}
Aroclor 1232	ug/kg	50,000	50,000	--	--	<66.3 {<22.1}	<3.33 {<1.11}	<3.32 {<1.1}	<3.33 {<1.11}	<33.3 {<11.1}	<3.33 {<1.11}	<16.7 {<5.55}	<3.33 {<1.11}
Aroclor 1242	ug/kg	50,000	50,000	--	--	<66.3 {<22.1}	<3.33 {<1.11}	<3.32 {<1.1}	<3.33 {<1.11}	<33.3 {<11.1}	<3.33 {<1.11}	<16.7 {<5.55}	<3.33 {<1.11}
Aroclor 1248	ug/kg	50,000	50,000	--	--	<66.3 {<22.1}	<3.33 {<1.11}	<3.32 {<1.1}	<3.33 {<1.11}	<33.3 {<11.1}	<3.33 {<1.11}	<16.7 {<5.55}	<3.33 {<1.11}
Aroclor 1254	ug/kg	50,000	50,000	--	--	1560	26.9	5.4	<3.33 {<1.11}	198	<3.33 {<1.11}	83.3	<3.33 {<1.11}
Aroclor 1260	ug/kg	50,000	50,000	--	--	1340	16	6.4	<3.33 {<1.11}	242	<3.33 {<1.11}	78.3	<3.33 {<1.11}
VOCs													
1,1,1-Trichloroethane	ug/kg	--	--	--	--	0.365 J	0.433 J	1.41	1.14	<0.943 {<0.283}	<0.781 {<0.234}	0.5 J	<0.909 {<0.273}
1,1,2,2-Tetrachloroethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/kg	--	--	--	--	<4.81 {<1.54}	<4.17 {<1.33}	<4.72 {<1.51}	<4.55 {<1.45}	<4.72 {<1.51}	<3.91 {<1.25}	<4.81 {<1.54}	<4.55 {<1.45}
1,1,2-Trichloroethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,1-Dichloroethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,1-Dichloroethene	ug/kg	--	--	14,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	0.352 J	<0.962 {<0.288}	<0.909 {<0.273}

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

WASTE CHARACTERIZATION SAMPLE RESULTS – IEL-2
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

						Object Name:	**ILWC0005**	**ILWC0006**	**ILWC0007**	**ILWC0008**	**ILWC0009**	**ILWC0010**	**ILWC0011**	**ILWC0012**
						Sample Name:	ILWC0005S001	ILWC0006S001	ILWC0007S001	ILWC0008S001	ILWC0009S001	ILWC0010S001	ILWC0011S001	ILWC0012S001
						Collection Date:	4/30/2010	4/28/2010	4/30/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010
						Sample Depth (feet):	5.0 - 5.5	5.0 - 5.5	3.0 - 3.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	2.0 - 2.5
ANALYTE	**UNITS**	**TTLC**	**WET Leachate Testing Trigger[a]**	**TCLP Leachate Testing Trigger[b]**	**STLC**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
1,2,4-Trichlorobenzene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,2-Dibromo-3-chloropropane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,2-Dibromoethane (EDB)	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,2-Dichlorobenzene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,2-Dichloroethane	ug/kg	--	--	10,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,2-Dichloropropane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,3-Dichlorobenzene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
1,4-Dichlorobenzene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
2-Butanone (MEK)	ug/kg	--	--	4,000,000	--	<4.81 {<1.44}	<4.17 {<1.25}	<4.72 {<1.42}	<4.55 {<1.36}	<4.72 {<1.42}	<3.91 {<1.17}	<4.81 {<1.44}	<4.55 {<1.36}
2-Hexanone	ug/kg	--	--	--	--	<4.81 {<1.44}	<4.17 {<1.25}	<4.72 {<1.42}	<4.55 {<1.36}	<4.72 {<1.42}	<3.91 {<1.17}	<4.81 {<1.44}	<4.55 {<1.36}
Acetone	ug/kg	--	--	--	--	<4.81 {<1.6}	<4.17 {<1.38}	<4.72 {<1.57}	<4.55 {<1.51}	<4.72 {<1.57}	<3.91 {<1.3}	<4.81 {<1.6}	<4.55 {<1.51}
Benzene	ug/kg	--	--	10,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Bromodichloromethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Bromoform	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Carbon Disulfide	ug/kg	--	--	--	--	<4.81 {<1.2}	<4.17 {<1.04}	<4.72 {<1.18}	<4.55 {<1.14}	<4.72 {<1.18}	<3.91 {<0.977}	<4.81 {<1.2}	<4.55 {<1.14}
Carbon Tetrachloride	ug/kg	--	--	10,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Chlorobenzene	ug/kg	--	--	2,000,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Chloroethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Chloroform	ug/kg	--	--	120,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Chloromethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
cis-1,2-Dichloroethene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
cis-1,3-Dichloropropene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Cyclohexane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Dibromochloromethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Dichlorodifluoromethane	ug/kg	--	--	--	--	<0.962 {<0.327}	<0.833 {<0.283}	<0.943 {<0.321}	<0.909 {<0.309}	<0.943 {<0.321}	<0.781 {<0.266}	<0.962 {<0.327}	<0.909 {<0.309}
Ethylbenzene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Hexachlorobutadiene	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Isopropylbenzene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
m,p-Xylenes	ug/kg	--	--	--	--	<1.92 {<0.288}	<1.67 {<0.25}	<1.89 {<0.283}	<1.82 {<0.273}	<1.89 {<0.283}	<1.56 {<0.234}	<1.92 {<0.288}	<1.82 {<0.273}
Methyl acetate	ug/kg	--	--	--	--	<4.81 {<1.6}	<4.17 {<1.38}	<4.72 {<1.57}	<4.55 {<1.51}	<4.72 {<1.57}	<3.91 {<1.3}	<4.81 {<1.6}	<4.55 {<1.51}
Methyl isobutyl ketone (MIBK)	ug/kg	--	--	--	--	<4.81 {<1.2}	<4.17 {<1.04}	<4.72 {<1.18}	<4.55 {<1.14}	<4.72 {<1.18}	<3.91 {<0.977}	<4.81 {<1.2}	<4.55 {<1.14}
Methylcyclohexane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Methylene chloride	ug/kg	--	--	--	--	2 J	<4.17 {<1.67}	<4.72 {<1.89}	<4.55 {<1.82}	<4.72 {<1.89}	<3.91 {<1.56}	<4.81 {<1.92}	<4.55 {<1.82}
Methyl-tert-butyl Ether (MTBE)	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
o-Xylene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Styrene	ug/kg	--	--	--	--	<0.962 {<0.288}	0.342 J	<0.943 {<0.283}	0.345 J	<0.943 {<0.283}	0.281 J	<0.962 {<0.288}	<0.909 {<0.273}

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

WASTE CHARACTERIZATION SAMPLE RESULTS – IEL-2
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**ILWC0005**	**ILWC0006**	**ILWC0007**	**ILWC0008**	**ILWC0009**	**ILWC0010**	**ILWC0011**	**ILWC0012**
				Sample Name:		ILWC0005S001	ILWC0006S001	ILWC0007S001	ILWC0008S001	ILWC0009S001	ILWC0010S001	ILWC0011S001	ILWC0012S001
				Collection Date:		4/30/2010	4/28/2010	4/30/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010
				Sample Depth (feet):		5.0 - 5.5	5.0 - 5.5	3.0 - 3.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	2.0 - 2.5
ANALYTE	**UNITS**	**TTLC**	**WET Leachate Testing Trigger[a]**	**TCLP Leachate Testing Trigger[b]**	**STLC**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
Tetrachloroethene	ug/kg	--	--	14,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	0.709 J	<0.943 {<0.283}	<0.781 {<0.234}	0.413 J	0.436 J
Tetrahydrofuran	ug/kg	--	--	--	--	<4.81 {<1.63}	<4.17 {<1.42}	<4.72 {<1.6}	<4.55 {<1.55}	<4.72 {<1.6}	<3.91 {<1.33}	<4.81 {<1.63}	<4.55 {<1.55}
Toluene	ug/kg	--	--	--	--	1.42	0.858	2.29	1.02	<0.943 {<0.283}	1.11	2.69	<0.909 {<0.273}
trans-1,2-Dichloroethene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
trans-1,3-Dichloropropene	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Trichloroethene	ug/kg	2,040,000	2,040,000	10,000	--	3.84	4.41	2.66	15.9	4.03	1.45	9.91	5.7
Trichlorofluoromethane	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Vinyl acetate	ug/kg	--	--	--	--	<4.81 {<1.2}	<4.17 {<1.04}	<4.72 {<1.18}	<4.55 {<1.14}	<4.72 {<1.18}	<3.91 {<0.977}	<4.81 {<1.2}	<4.55 {<1.14}
Vinyl chloride	ug/kg	--	--	4,000	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
Xylenes, Total	ug/kg	--	--	--	--	<0.962 {<0.288}	<0.833 {<0.25}	<0.943 {<0.283}	<0.909 {<0.273}	<0.943 {<0.283}	<0.781 {<0.234}	<0.962 {<0.288}	<0.909 {<0.273}
SVOCs													
1,1'-Biphenyl	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
1,2,4-Trichlorobenzene	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
1,2-Dichlorobenzene	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
1,3-Dichlorobenzene	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
1,4-Dichlorobenzene	ug/kg	--	--	150,000	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
1-Naphthylamine	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
2,4,5-Trichlorophenol	ug/kg	--	--	8,000,000	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
2,4,6-Trichlorophenol	ug/kg	--	--	40,000	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
2,4-Dichlorophenol	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
2,4-Dimethylphenol	ug/kg	--	--	--	--	<332 {<116}	<665 {<233}	<332 {<116}	<166 {<58.1}	<664 {<232}	<166 {<58}	<166 {<58.1}	<166 {<58.1}
2,4-Dinitrophenol	ug/kg	--	--	--	--	<663 {<126}	<1330 {<253}	<664 {<126}	<332 {<63.1}	<1330 {<252}	<331 {<62.9}	<332 {<63.1}	<332 {<63.1}
2,4-Dinitrotoluene	ug/kg	--	--	2,600	--	<332 {<33.2}	<665 {<66.5}	<332 {<33.2}	<166 {<16.6}	<664 {<66.4}	<166 {<16.6}	<166 {<16.6}	<166 {<16.6}
2,6-Dinitrotoluene	ug/kg	--	--	--	--	<332 {<33.2}	<665 {<66.5}	<332 {<33.2}	<166 {<16.6}	<664 {<66.4}	<166 {<16.6}	<166 {<16.6}	<166 {<16.6}
2-Chloronaphthalene	ug/kg	--	--	--	--	<33.2 {<10.9}	<66.5 {<22}	<33.2 {<10.9}	<16.6 {<5.48}	<66.4 {<21.9}	<16.6 {<5.47}	<16.6 {<5.48}	<16.6 {<5.48}
2-Chlorophenol	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
2-Methylnaphthalene	ug/kg	--	--	--	--	<33.2 {<6.63}	<66.5 {<13.3}	<33.2 {<6.64}	<16.6 {<3.32}	<66.4 {<13.3}	<16.6 {<3.31}	<16.6 {<3.32}	<16.6 {<3.32}
2-Methylphenol	ug/kg	--	--	200	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
2-Naphthylamine	ug/kg	--	--	--	--	<332 {<109}	<665 {<220}	<332 {<109}	<166 {<54.8}	<664 {<219}	<166 {<54.7}	<166 {<54.8}	<166 {<54.8}
2-Nitroaniline	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
2-Nitrophenol	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
3,3-Dichlorobenzidine	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
3-Nitroaniline	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
4,6-Dinitro-2-methylphenol	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
4-Aminobiphenyl	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
4-Bromophenyl phenyl ether	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

WASTE CHARACTERIZATION SAMPLE RESULTS – IEL-2
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**ILWC0005**	**ILWC0006**	**ILWC0007**	**ILWC0008**	**ILWC0009**	**ILWC0010**	**ILWC0011**	**ILWC0012**
				Sample Name:		ILWC0005S001	ILWC0006S001	ILWC0007S001	ILWC0008S001	ILWC0009S001	ILWC0010S001	ILWC0011S001	ILWC0012S001
				Collection Date:		4/30/2010	4/28/2010	4/30/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010
				Sample Depth (feet):		5.0 - 5.5	5.0 - 5.5	3.0 - 3.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	2.0 - 2.5
ANALYTE	**UNITS**	**TTLC**	**WET Leachate Testing Trigger[a]**	**TCLP Leachate Testing Trigger[b]**	**STLC**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
4-Chloro-3-methylphenol	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
4-Chloroaniline	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
4-Chlorophenyl-phenylether	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
4-Methylphenol	ug/kg	--	--	200	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
4-Nitroaniline	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
4-Nitrophenol	ug/kg	--	--	--	--	<332 {<109}	<665 {<220}	<332 {<109}	<166 {<54.8}	<664 {<219}	<166 {<54.7}	<166 {<54.8}	<166 {<54.8}
Acenaphthene	ug/kg	--	--	--	--	<33.2 {<10.9}	<66.5 {<22}	<33.2 {<10.9}	<16.6 {<5.48}	<66.4 {<21.9}	<16.6 {<5.47}	<16.6 {<5.48}	<16.6 {<5.48}
Acenaphthylene	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Acetophenone	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Anthracene	ug/kg	--	--	--	--	<33.2 {<6.63}	<66.5 {<13.3}	<33.2 {<6.64}	<16.6 {<3.32}	<66.4 {<13.3}	<16.6 {<3.31}	<16.6 {<3.32}	<16.6 {<3.32}
Atrazine	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
Benzaldehyde	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
Benzidine	ug/kg	--	--	--	--	<332 {<99.5}	<665 {<200}	<332 {<99.5}	<166 {<49.8}	<664 {<199}	<166 {<49.7}	<166 {<49.8}	<166 {<49.8}
Benzo(a)anthracene	ug/kg	--	--	--	--	47	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Benzo(a)pyrene	ug/kg	--	--	--	--	60.6	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Benzo(b)fluoranthene	ug/kg	--	--	--	--	86.8	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Benzo(ghi)perylene	ug/kg	--	--	--	--	25.8 J	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Benzo(k)fluoranthene	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Bis(2-chloroethoxy)methane	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Bis(2-chloroethyl)ether	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Bis(2-chloroisopropyl)ether	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
bis(2-Ethylhexyl) phthalate	ug/kg	--	--	--	--	73.9 J	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Butyl benzyl phthalate	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Caprolactam	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Carbazole	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Chrysene	ug/kg	--	--	--	--	38.4	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Dibenzo(a,h)anthracene	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Dibenzofuran	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Diethyl phthalate	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Dimethyl phthalate	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Di-n-butyl phthalate	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Di-n-octyl phthalate	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Diphenylamine	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Fluoranthene	ug/kg	--	--	--	--	61.2	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Fluorene	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Hexachlorobenzene	ug/kg	--	--	2,600	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

WASTE CHARACTERIZATION SAMPLE RESULTS – IEL-2
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

				Object Name:		**ILWC0005**	**ILWC0006**	**ILWC0007**	**ILWC0008**	**ILWC0009**	**ILWC0010**	**ILWC0011**	**ILWC0012**
				Sample Name:		ILWC0005S001	ILWC0006S001	ILWC0007S001	ILWC0008S001	ILWC0009S001	ILWC0010S001	ILWC0011S001	ILWC0012S001
				Collection Date:		4/30/2010	4/28/2010	4/30/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010	4/28/2010
				Sample Depth (feet):		5.0 - 5.5	5.0 - 5.5	3.0 - 3.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	1.0 - 1.5	2.0 - 2.5
ANALYTE	**UNITS**	**TTLC**	**WET Leachate Testing Trigger[a]**	**TCLP Leachate Testing Trigger[b]**	**STLC**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**	**RESULT[c]**
Hexachlorobutadiene	ug/kg	--	--	10,000	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Hexachlorocyclopentadiene	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Hexachloroethane	ug/kg	--	--	60,000	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Indeno(1,2,3-cd)pyrene	ug/kg	--	--	--	--	69.8	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Isophorone	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Naphthalene	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Nitrobenzene	ug/kg	--	--	40,000	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
n-Nitrosodimethylamine	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
n-Nitroso-di-n-propylamine	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
p-(Dimethylamino)azobenzene	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Pentachlorophenol	ug/kg	17,000	17,000	2,000,000	--	<332 {<82.9}	<665 {<166}	<332 {<82.9}	<166 {<41.5}	<664 {<166}	<166 {<41.4}	<166 {<41.5}	<166 {<41.5}
Phenanthrene	ug/kg	--	--	--	--	<33.2 {<9.95}	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Phenol	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
Pyrene	ug/kg	--	--	--	--	60.7	<66.5 {<20}	<33.2 {<9.95}	<16.6 {<4.98}	<66.4 {<19.9}	<16.6 {<4.97}	<16.6 {<4.98}	<16.6 {<4.98}
Pyridine	ug/kg	--	--	--	--	<332 {<66.3}	<665 {<133}	<332 {<66.4}	<166 {<33.2}	<664 {<133}	<166 {<33.1}	<166 {<33.2}	<166 {<33.2}
RADIONUCLIDES	--	--	--	--	--	R	R	R	R	R	R	R	R

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

WASTE CHARACTERIZATION SAMPLE RESULTS – IEL-1 and IEL-2
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

"--" - not analyzed / not applicable

<5 - Analyte not detected at or above the stated method detection limit (metals) or analyte not detected at or above the stated reporting limit (organics)

{<1} - Analyte not detected at or above the stated method detection limit (organics)

[a] - WET Leachate Testing Trigger = STLC limit * 10

[b] - TCLP Leachate Testing Trigger = TCLP limit * 20

[c] Waste characterization sample results not validated

H - Analytical holding time was exceeded.

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.

µg/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

mg/L - milligrams per liter

R - Radiological analysis includes gamma spectroscopy (Na-22, K-40, Mn-54, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Th-228, Th-232, U-235, U-238 and Am-241), strontium-90, and tritium. Boeing will be preparing a document that provides the radiological results and statistical analysis of these waste characterization samples.

SU - Standard Units