SOIL CHARACTERIZATION
Westinghouse Emeryville Facility

Prepared for

Westinghouse Electric Corporation

August 1993

Prepared by

EMCON Associates
1921 Ringwood Avenue
San Jose, California 95131-1721

Project 0F88-001.14

EMCON Associates
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August 30, 1993
Project 0F88-001.14

Mr. Gordon Taylor
Senior Project Engineer
Westinghouse Electric Corporation
Gateway Center
Pittsburgh, Pennsylvania 15222

Re: Soil sampling and analysis, Emeryville facility

Dear Mr. Taylor:

EMCON Associates (EMCON) is pleased to submit this soil characterization report for a soils investigation at the Westinghouse Electric Corporation (Westinghouse facility) in Emeryville, California.

The investigation showed that polychlorinated biphenyls were detected in only 2 of 45 soil samples collected under buildings 24 and 37. Total petroleum hydrocarbons as diesel or hydraulic oil, above 100 parts per million were detected in only 4 of the 45 samples. No volatile organic compounds, total petroleum hydrocarbons as gasoline, or benzene, toluene, ethylbenzene and xylene compound were detected in any of the 45 soil samples.

If you have questions, please call.

Sincerely,

EMCON Associates

Mark Smolley

Mark Smolley
Project Manager

Attachment: Soil Characterization Report

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TABLES AND ILLUSTRATIONS

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1 INTRODUCTION

This report discusses the results of a soil sampling event conducted by EMCON Associates (EMCON) at the Westinghouse Electric Corporation (Westinghouse) facility at 5840 Landregen Street, Emeryville, California (Figure 1). Soil samples were collected at 23 locations beneath buildings 24 and 37 according to the investigation approach described in the *Sampling and Analysis Plan* (EMCON, May 12, 1993).

1.1 Background

Westinghouse owns a facility at 5840 Landregen Street in Emeryville, California (the Facility) at which Westinghouse formerly operated an apparatus service plant. In the early days of its operation, some transformers and other electrical apparatus were manufactured at the Facility. Facility operations historically included regional and district administration, engineering services, warehousing, and repair of transformers and other electrical apparatus. Westinghouse ceased using the Facility for on-site repair of electrical apparatus in 1982 and ceased using the Facility entirely in 1992.

Some of the manufacture, repair, and service activities at the Facility involved handling, storing, and using dielectric fluids, some of which contained polychlorinated biphenyls (PCBs). In addition, previous environmental investigations identified the presence of volatile organic compounds (VOCs) and petroleum hydrocarbons (gasoline and diesel).

1.2 Objective

The primary objective of the soil sampling was to determine whether the soils beneath buildings 24 and 37 may have been impacted by chemicals that were used during the manufacturing and repair operations at the site. The soil samples were analyzed for PCBs, halogenated VOCs, high-boiling-point hydrocarbons (HBHCs) which include total petroleum hydrocarbons (TPH) as diesel and hydraulic oil, TPH as gasoline, and benzene, toluene, ethylbenzene, and xylenes (BTEX).

2 SITE CHARACTERIZATION

This section describes the rationale for soil sampling, the methods and procedures used during drilling and sampling activities, and the analytical methods used to test the soil samples. This section also presents the observations made during the field investigation.

2.1 Soil Sampling Rationale

Two samples were collected and analyzed at each boring location to evaluate the vertical extent of any impact on the unsaturated soils. Twenty-four (24) soil borings (SB-1 through SB-24) were drilled and sampled from beneath the concrete floor of buildings 24 and 37. Two samples were collected from each boring (except SB-5 and SB-6) at depths of 1.5 to 2.0 feet and 3.0 feet to 3.5 feet, as measured from the base of the concrete pad. In borings SB-5 and SB-6, attempts were made to sample just below the base of the truck pit which is at approximately 4.5 feet below the base of the concrete pad. No samples were collected from boring SB-5 because of an obstruction encountered at a depth of 4 feet. Only one sample was collected from boring SB-6 (at 4.5 feet). A second sample could not be collected from boring SB-6 because saturated soils were encountered at this same depth.

Proposed soil borings SB-1, SB-5, SB-6, SB-18, and SB-22 were located within the truck pits. However, upon mobilization the truck pits were found to be either paved over or filled with gravel. Therefore, these borings were repositioned approximately to 1 to 2 feet outside the pit areas but within the concrete pads.

2.2 Soil Boring Procedures

Before drilling began, a concrete cutting service was contracted to core the concrete at each boring location. The borings were drilled using hand-augers and samples were collected using push-drive samplers. The hand-auger and push-drive sampler were steam-cleaned or washed with phosphate-free detergent and rinsed between each soil sample.

The augers were used to drill down to the top of the first sampling zone then removed from the boring. The push-drive sampler, fitted with a stainless-steel ring, was inserted into the boring and a sample collected by driving the sampler into the undisturbed soil (from 1.5 to 2.0 feet). After the sampler was removed from the boring, the ring was

removed and its ends covered with Teflon® tape and plastic end-caps. The sample was then labeled, placed inside a plastic zip-lock bag, and stored in a cooler containing ice. Hand-augering was continued down to the top of the second sampling zone (3.0 feet) and a second sample was collected (from 3.0 to 3.5 feet).

The samples were delivered to Columbia Analytical Services (CAS), a state-certified laboratory, along with appropriate chain-of-custody forms to document possession and transfer of samples.

2.3 Analytical Methods - Soil Samples

All the samples were analyzed for PCBs (by U.S. Environmental Protection Agency [EPA] method 8080), VOCs (by EPA method 8010), HBHC (including TPH as diesel and hydraulic oil) and TPH as gasoline by the Leaking Underground Fuel Tank [LUFT] method), and BTEX (by EPA method 8020). The certified analytical reports are presented in Appendix A.

2.4 Field Observations

The field investigation generally indicates that the Westinghouse Emeryville site lies upon a fill layer between 1 and 4 feet thick, consisting of silty gravel. This fill layer overlies Bay Mud deposits, which consist of silt, clay, and clayey sand. As seen in boring SB-6, groundwater was encountered at approximately 4.5 feet below the ground surface (BGS) as measured from the base of the concrete pad.

3 ANALYTICAL RESULTS

This section discusses the analytical results for the soil samples collected. Table 1 summarizes all of the analytical results. Figure 2 presents the PCB concentrations and Figure 3 presents the TPH concentrations for each sample collected. The certified analytical reports are presented in Appendix A and an evaluation of the laboratory quality control results is presented in Appendix B.

Figures 2 and 3 also present analyses from borings EB-1 and EB-2, which were drilled in January 1992 as part of geotechnical engineering evaluation. Borings EB-1 and EB-2 are the only other borings completed in Buildings 24 and 37.

3.1 PCBs

Only two samples had detectable concentrations of PCBs. Boring SB-8 contained 1.0 parts per million (ppm) PCBs at the 1.5 foot level, and SB-21 contained PCBs at 0.2 ppm at the 1.5 feet level. All other samples did not contain PCBs above the analytical method reporting limit of 0.1 ppm.

3.2 Petroleum Hydrocarbons

Although TPH concentrations as hydraulic oil or diesel were detected in 17 of the 45 soil samples, only 4 samples exceeded 100 ppm. Fifteen of the 45 soil samples contained detectable concentrations of TPH as hydraulic oil between 8 and 680 ppm. Two of the 45 samples contained TPH as diesel; SB-3 at 1.5 feet (2 ppm) and SB-12 at 3 feet (9,400 ppm).

The soil from a depth of 3 feet at boring SB-12 (which contained 9,400 ppm TPH as diesel) was black and consisted of slag fragments with debris, including very flaky material similar to decomposed plastic along with pottery shards, nails, and bolts. No odor was detected. The upper sample collected at SB-12 (at 1.5 feet) was a brown sandy gravel which may be fill material placed over the debris.

The three other borings containing TPH concentrations (as hydraulic oil) above 100 ppm were SB-6 at 4.5 feet (680 ppm), SB-8 at 1.5 feet (190 ppm), and SB-10 at 3 feet

(320 ppm). These three borings and boring SB-12 are located in the central portion of building 37.

3.3 VOCs, TPHG, and BTEX

No VOCs, TPHG, or BTEX were detected in any of the 45 soil samples collected at the site.

3.4 Summary of Soil Analyses

PCBs were detected in only 2 of the 45 soil samples collected under buildings 24 and 37: boring SB-8 at 1.5 feet (1.0 ppm) and SB-21 at 1.5 feet (0.2 ppm). The highest TPH concentration (as diesel) was 9,400 ppm in SB-12 at 3 feet. Three other samples, also collected under building 37, contained TPH concentrations (as hydraulic oil) above 100 ppm. Eleven borings contained soil samples with TPH concentrations between 8 and 41 ppm.

No VOCs, TPHG, or BTEX compounds were detected in any of the 45 soil samples.

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Project 0F88-001.14
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Table 1

Soil Analytical Results

Units: mg/kg (1)

Boring Number	Depth (feet)	Sample Date	PCBs (2)	TPHD (3)	Hydraulic Oil	TPHG (4)	VOCs (5)
SB-1	1.5	06/18/93	<0.1	<1	31	ND (6)	ND
SB-1	3	06/18/93	<0.1	<1	<5	ND	ND
SB-2	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-2	3	06/17/93	<0.1	<1	<5	ND	ND
SB-3	1.5	06/17/93	<0.1	2	<5	ND	ND
SB-3	3	06/17/93	<0.1	<1	11	ND	ND
SB-4	1.5	06/17/93	<0.1	<1	9	ND	ND
SB-4	3	06/17/93	<0.1	<1	<5	ND	ND
SB-6	4.5	06/18/93	<0.1	<10	680	ND	ND
SB-7	1.5	06/17/93	<0.1	<1	17	ND	ND
SB-7	3	06/17/93	<0.1	<1	18	ND	ND
SB-8	1.5	06/17/93	1	<10	190	ND	ND
SB-8	3	06/17/93	<0.1	<1	21	ND	ND
SB-9	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-9	3	06/17/93	<0.1	<1	<5	ND	ND
SB-10	1.5	06/17/93	<0.1	<1	41	ND	ND
SB-10	3	06/17/93	<0.1	<10	320	ND	ND
SB-11	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-11	3	06/17/93	<0.1	<1	28	ND	ND
SB-12	1.5	06/17/93	<0.1	<1	30	ND	ND
SB-12	3	06/17/93	<0.1	9400 (7)	<500	ND	ND
SB-13	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-13	3	06/17/93	<0.1	<1	<5	ND	ND
SB-14	1.5	06/17/93	<0.1	<1	11	ND	ND
SB-14	3	06/17/93	<0.1	<1	<5	ND	ND
SB-15	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-15	3	06/17/93	<0.1	<1	<5	ND	ND
SB-16	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-16	3	06/17/93	<0.1	<1	<5	ND	ND
SB-17	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-17	3	06/17/93	<0.1	<1	<5	ND	ND
SB-18	1.5	06/18/93	<0.1	<1	21	ND	ND
SB-18	3	06/18/93	<0.1	<1	<5	ND	ND
SB-19	1.5	06/18/93	<0.1	<1	<5	ND	ND
SB-19	3	06/18/93	<0.1	<1	<5	ND	ND
SB-20	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-20	3	06/17/93	<0.1	<1	<5	ND	ND

Table 1

Soil Analytical Results
(continued)

Units: mg/kg (1)

Boring Number	Depth (feet)	Sample Date	PCBs (2)	TPHD (3)	Hydraulic Oil	TPHG (4)	VOCs (5)
SB-21	1.5	06/18/93	0.2	<1	<5	ND	ND
SB-21	3	06/18/93	<0.1	<1	8	ND	ND
SB-22	1.5	06/18/93	<0.1	<1	<5	ND	ND
SB-22	3	06/18/93	<0.1	<1	<5	ND	ND
SB-23	1.5	06/17/93	<0.1	<1	<5	ND	ND
SB-23	3	06/17/93	<0.1	<1	<5	ND	ND
SB-24	1.5	06/18/93	<0.1	<1	<5	ND	ND
SB-24	3	06/18/93	<0.1	<1	<5	ND	ND

(1) mg/kg = milligrams per kilogram
(2) PCBs = polychlorinated biphenyls analyzed by Environmental Protection Agency (EPA) method 8080.
(3) TPHD = total petroleum hydrocarbons as diesel.
(4) TPHG = total petroleum hydrocarbons as gasoline.
(5) VOC = volatile organic compounds analyzed by EPA methods 8010 and 8020.
(6) ND = not detected above their respective method reporting limits (MRLs). See certified analytical reports in Appendix A for MRLs.
(7) Unknown high boiling point hydrocarbon in the volatility range of diesel. Chromatogram does not match the typical diesel pattern.
Note: SB-5 not sampled because of an obstruction at 4 feet.
SB-6 not sampled below 4.5 feet because of saturated soils.

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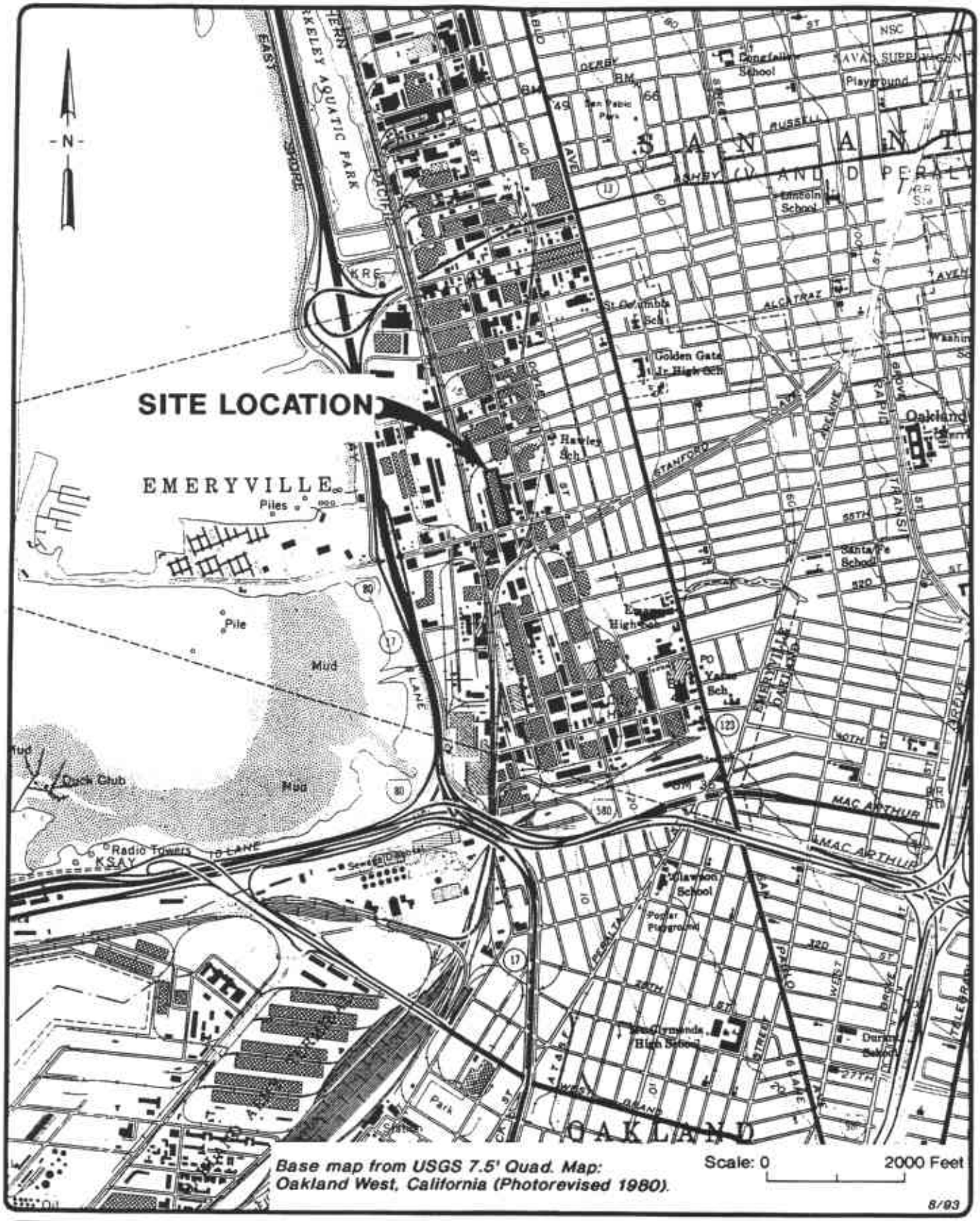

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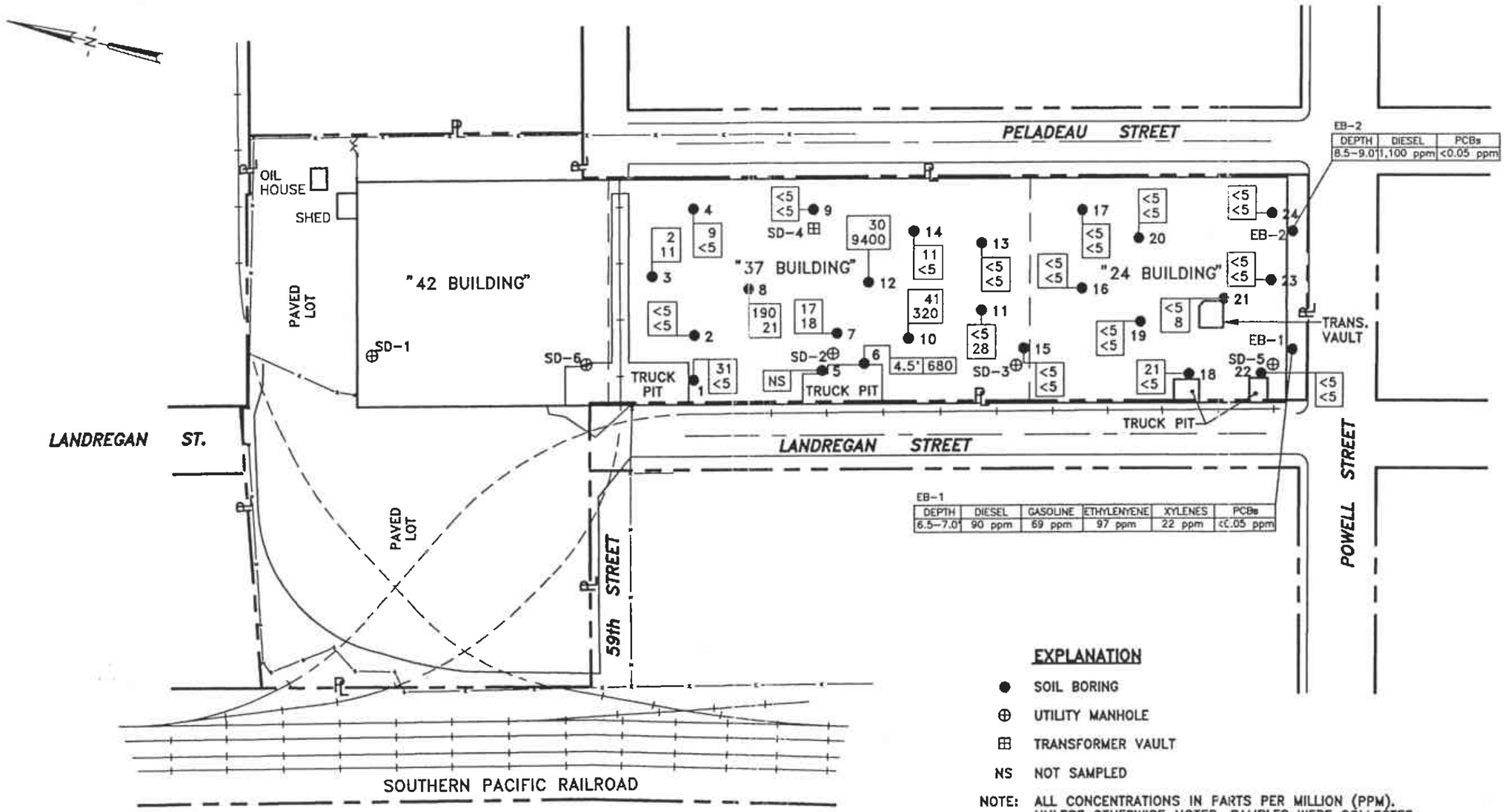
WESTINGHOUSE ELECTRIC CORPORATION
SOIL SAMPLING
EMERYVILLE, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
F88-01.14



NOTE: Borings EB-1 and EB-2 were completed as part of a geotechnical investigation in January 1992.

EMCON Associates

SCALE: 0 100 200 FEET

WESTINGHOUSE ELECTRIC CORPORATION
SOIL SAMPLING
EMERYVILLE, CALIFORNIA

TOTAL PETROLEUM HYDROCARBON CONCENTRATIONS

FIGURE NO. 3
PROJECT NO. F88-01.14

APPENDIX A

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Columbia Analytical Services inc.

July 9, 1993

Service Request No: SJ93-0802

Vivian Hsiong
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Re: **Westinghouse-Emeryville/0F88-001.14**

Dear Ms. Hsiong:

Attached are the results of the soil samples submitted to our lab on June 18, 1993. For your reference, these analyses have been assigned our service request number SJ93-0802.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

Keoni A. Murphy
COLUMBIA ANALYTICAL SERVICES, INC.

KAM/drf

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NR	Not Requested
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	06/30/93
Sample Matrix:	Soil	**Date Analyzed:**	07/02/93
		Service Request No.:	SJ93-0802

Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name	MRL	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Hydraulic Oil *
SB1 (1.5-2)	1	ND	ND	ND	ND	31.
SB18 (3-4)	1	ND	ND	ND	ND	<5.
Method Blank	1	ND	ND	ND	ND	<5.

* The MRL for Hydraulic Oil is five times greater than the MRL for the other petroleum products in the Hydrocarbon Scan.

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	06/30/93
Sample Matrix:	Soil	**Date Analyzed:**	07/06/93
		Service Request No.:	SJ93-0802

Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name	MRL	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Hydraulic Oil *
SB1 (3-4)	1	ND	ND	ND	ND	<5.
SB19 (1.5-2)	1	ND	ND	ND	ND	<5.
SB19 (3-4)	1	ND	ND	ND	ND	<5.
SB6 (4.5-5.5)	1	<10. **	<10. **	<10. **	<10. **	680.
SB24 (1.5-2)	1	ND	ND	ND	ND	<5.
SB24 (3-4)	1	ND	ND	ND	ND	<5.
SB18 (1.5-2)	1	ND	ND	ND	ND	21.
SB21 (1.5-2)	1	ND	ND	ND	ND	<5.
SB21 (3-4)	1	ND	ND	ND	ND	8.
SB22 (1.5-2)	1	ND	ND	ND	ND	<5.
SB22 (3-4)	1	ND	ND	ND	ND	<5.
Method Blank	1	ND	ND	ND	ND	<5.

* The MRL for Hydraulic Oil is five times greater than the MRL for the other petroleum products in the Hydrocarbon Scan.

** Raised MRL due to high analyte concentration requiring sample dilution.

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB1 (1.5-2)	SB1 (3-4)	SB19 (1.5-2)
Date Analyzed:		06/29/93	06/29/93	06/29/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB19 (3-4)	SB6 (4.5-5.5)	SB24 (1.5-2)
Date Analyzed:		06/29/93	06/29/93	06/29/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kedric A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB-24 (3-4)	SB18 (1.5-2)	SB18 (3-4)
Date Analyzed:		06/29/93	06/29/93	06/29/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB21 (1.5-2)	SB21 (3-4)	SB22 (1.5-2)
Date Analyzed:		06/29/93	06/29/93	06/29/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB22 (3-4)	Method Blank
Date Analyzed:		06/29/93 *	06/29/93 *
Analyte	**MRL**		
Benzene	0.05	ND	ND
Toluene	0.1	ND	ND
Ethylbenzene	0.1	ND	ND
Total Xylenes	0.1	ND	ND
TPH as Gasoline	5	ND	ND

* This sample was part of the analytical batch started on June 29, 1993. However, it was analyzed after midnight so the actual date analyzed is June 30, 1993.

Approved by: Kevin A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB1 (1.5-2)	SB1 (3-4)	SB19 (1.5-2)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB19 (3-4)	SB6 (4.5-5.5)	SB24 (1.5-2)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: _____ Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

Halogenated and Aromatic Volatile Organic Compounds
EPA Methods 5030/8010/8020
mg/Kg (ppm)
As Received Basis

Sample Name:		SB24 (3-4)	SB18 (1.5-2)	SB18 (3-4)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

Halogenated and Aromatic Volatile Organic Compounds
EPA Methods 5030/8010/8020
mg/Kg (ppm)
As Received Basis

Sample Name:		SB21 (1.5-2)	SB21 (3-4)	SB22 (1.5-2)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: _____ Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

Halogenated and Aromatic Volatile Organic Compounds
EPA Methods 5030/8010/8020
mg/Kg (ppm)
As Received Basis

Sample Name:		SB22 (3-4)	Method Blank
Date Analyzed:		06/28/93	06/28/93
Analyte	**MRL**		
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND
Chloromethane	0.1	ND	ND
Vinyl Chloride	0.05	ND	ND
Bromomethane	0.05	ND	ND
Chloroethane	0.05	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND
1,1-Dichloroethene	0.05	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND
Methylene Chloride	0.05	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND
1,1-Dichloroethane	0.05	ND	ND
Chloroform	0.05	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND
Carbon Tetrachloride	0.05	ND	ND
1,2-Dichloroethane	0.05	ND	ND
Trichloroethene (TCE)	0.05	ND	ND
1,2-Dichloropropane	0.05	ND	ND
Bromodichloromethane	0.05	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND
Dibromochloromethane	0.05	ND	ND
Chlorobenzene	0.05	ND	ND
Bromoform	0.05	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND

Approved by: Kevin Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	07/01/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0802

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB1 (1.5-2)	SB1 (3-4)	SB19 (1.5-2)
Date Analyzed:		07/01/93	07/01/93	07/01/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on July 1, 1993. However, it was analyzed after midnight so the actual date analyzed is July 2, 1993.

Approved by: _____ Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	07/01/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0802

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB19 (3-4)	SB6 (4.5-5.5)	SB24 (1.5-2)
Date Analyzed:		07/01/93 *	07/01/93 *	07/01/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on July 1, 1993. However, it was analyzed after midnight so the actual date analyzed is July 2, 1993.

Approved by: Kathy Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	07/01/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0802

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB24 (3-4)	SB18 (1.5-2)	SB18 (3-4)
Date Analyzed:		07/01/93 *	07/01/93 *	07/01/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on July 1, 1993. However, it was analyzed after midnight so the actual date analyzed is July 2, 1993.

Approved by: K. Edward Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	07/01/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0802

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB21 (1.5-2)	SB21 (3-4)	SB22 (1.5-2)
Date Analyzed:		07/01/93 *	07/01/93 *	07/01/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	0.2	ND	ND

* This sample was part of the analytical batch started on July 1, 1993. However, it was analyzed after midnight so the actual date analyzed is July 2, 1993.

Approved by: Kevin A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	07/01/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0802

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB22 (3-4)	Method Blank
Date Analyzed:		07/01/93 *	07/01/93
Analyte	**MRL**		
Aroclor 1016	0.1	ND	ND
Aroclor 1221	0.1	ND	ND
Aroclor 1232	0.1	ND	ND
Aroclor 1242	0.1	ND	ND
Aroclor 1248	0.1	ND	ND
Aroclor 1254	0.1	ND	ND
Aroclor 1260	0.1	ND	ND

* This sample was part of the analytical batch started on July 1, 1993. However, it was analyzed after midnight so the actual date analyzed is July 2, 1993.

Approved by: Kevin A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel
EPA Methods 3550/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery *p*-Terphenyl
SB1 (1.5-2)	07/02/93	84.
SB1 (3-4)	07/06/93	70.
SB19 (1.5-2)	07/06/93	80.
SB19 (3-4)	07/06/93	81.
SB6 (4.5-5.5)	07/06/93	101.
SB24 (1.5-2)	07/06/93	79.
SB24 (3-4)	07/06/93	88.
SB18 (1.5-2)	07/06/93	79.
SB18 (3-4)	07/02/93	87.
SB21 (1.5-2)	07/06/93	64.
SB21 (3-4)	07/06/93	82.
SB22 (1.5-2)	07/06/93	84.
SB22 (3-4)	07/06/93	78.
SB18 (3-4) MS	07/02/93	88.
SB18 (3-4) DMS	07/02/93	99.
Method Blank	07/02/93	93.
Method Blank	07/06/93	95.
CAS Acceptance Criteria		46-154

Approved by: Tom Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Analyzed:**	07/02/93
Sample Matrix:	Soil	**Service Request No.:**	SJ93-0802

Matrix Spike/Duplicate Matrix Spike Summary
Hydrocarbon Scan
EPA Methods 3510/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name: SB18 (3-4)

			Percent Recovery				
	Spike	Sample	Spike Result				CAS Acceptance
Analyte	Level	Result	MS	DMS	MS	DMS	Criteria
Diesel	100.	ND	84.	86.	84.	86.	45-145

Approved by: Kevin A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery α,α,α-Trifluorotoluene
SB1 (1.5-2)	06/29/93	90.
SB1 (3-4)	06/29/93	94.
SB19 (1.5-2)	06/29/93	92.
SB19 (3-4)	06/29/93	90.
SB6 (4.5-5.5)	06/29/93	92.
SB24 (1.5-2)	06/29/93	93.
SB24 (3-4)	06/29/93	92.
SB18 (1.5-2)	06/29/93	92.
SB18 (3-4)	06/29/93	90.
SB21 (1.5-2)	06/29/93	91.
SB21 (3-4)	06/29/93	91.
SB22 (1.5-2)	06/29/93	92.
SB22 (3-4)	06/29/93	90.
SB1 (3-4) MS	06/29/93	98.
SB1 (3-4) DMS	06/29/93	95.
Method Blank	06/29/93	93.
	CAS Acceptance Criteria	63-137

Approved by: Robert Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

Matrix Spike Summary
TPH as Gasoline
EPA Methods 5030/California DHS LUFT Method
mg/Kg (ppm)

Sample Name: SB1 (3-4)
Date Analyzed: 06/29/93

			Spike Result		Percent Recovery		CAS Acceptance
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	Criteria
TPH as Gasoline	25.	ND	22.7	23.3	91.	93.	69-131

Approved by: Kenneth Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0802
Sample Matrix:	Soil		

Surrogate Recovery Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/8010

Sample Name	Date Analyzed	Percent Recovery 4-Bromofluorobenzene
SB1 (1.5-2)	06/28/93	112.
SB1 (3-5)	06/28/93	108.
SB19 (1.5-2)	06/28/93	106.
SB19 (3-4)	06/28/93	117.
SB6 (4.5-5.5)	06/28/93	95.
SB24 (1.5-2)	06/28/93	115.
SB24 (3-4)	06/28/93	112.
SB18 (1.5-2)	06/28/93	99.
SB18 (3-4)	06/28/93	99.
SB21 (1.5-2)	06/28/93	106.
SB21 (3-4)	06/28/93	102.
SB22 (1.5-2)	06/28/93	94.
SB22 (3-4)	06/28/93	107.
SB1 (1.5-2) MS	06/28/93	121.
SB1 (1.5-2) DMS	06/28/93	116.
Method Blank	06/28/93	109.
	CAS Acceptance Criteria	70-130

Approved by: Thomas A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse-Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0802

Matrix Spike/Duplicate Matrix Spike Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name: SB1 (1.5-2)
Date Analyzed: 06/28/93

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria
1,1-Dichloroethene	0.5	ND	0.54	0.55	108.	110.	28-167
Trichloroethene	0.5	ND	0.44	0.46	88.	92.	35-146
Tetrachloroethene	0.5	ND	0.44	0.45	88.	90.	26-162

Approved by: Tom Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Work Order No.:**	SJ93-0802
Sample Matrix:	Soil		

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080

Sample Name	Date Analyzed	Percent Recovery Tetrachloro-*m*-xylene.
SB1 (1.5-2)	07/01/93	78.
SB1 (3-4)	07/01/93	77.
SB19 (1.5-2)	07/01/93	82.
SB19 (3-4)	07/01/93	86.
SB6 (4.5-5.5)	07/01/93	60.
SB24 (1.5-2)	07/01/93	84.
SB24 (3-4)	07/01/93	83.
SB18 (1.5-2)	07/01/93	79.
SB18 (3-4)	07/01/93	78.
SB21 (1.5-2)	07/01/93	82.
SB21 (3-4)	07/01/93	80.
SB22 (1.5-2)	07/01/93	83.
SB22 (3-4)	07/01/93	80.
SB19 (3-4) MS	07/01/93	74.
SB19 (3-4) DMS	07/01/93	78.
Method Blank	07/01/93	77.
	CAS Acceptance Criteria	45-112

Approved by: Kevin A Murphy Date: July 9, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse-Emeryville/0F88-001.14	**Date Extracted:**	07/01/93
Sample Matrix:	Soil	**Date Analyzed:**	07/01/93
		Work Order No.:	SJ93-0802

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name: SB19 (3-4)

			Spike Result		Percent Recovery			
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria	Relative Percent Difference
Aroclor 1260	0.167	ND	0.126	0.119	75.	71.	62-154	6.

Approved by: Robert Murphy Date: July 9, 1993

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Blu Analytical Services inc.
1921 Ringwood Ave. • San Jose, CA 95131 • (408) 437-2400, FAX (408)437-9356

DATE 6/18/93 PAGE ____ OF ____

PROJECT NAME Westinghouse Emeryville OF88-0114
PROJECT MNGR. M. Smolley
COMPANY/ADDRESS EMCON
PHONE
SAMPLERS SIGNATURE Bart Stayhood

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010/8021	TPH as Gas/BTEX DHS LUFT (8020)	TPH as Diesel/BHO DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO4, PO4, F, NO2, Alk, TDS, TSS (circle)	NH3-N, COD, Total-P, TKN, NO3 (circle)	Total Organic Carbon TOC 415.9060	Total Phenols	PCBs (8080)				REMARKS
SB1 (1.5-2)	6/18/93	1241	1	Soil	1			X	X	X								X				
SB1 (3-4)		1245	2																			
SB19 (1.5-2)		1250	3																			
SB19 (3-4)		1255	4																			
SB6 (4.5-5.5)		1325	5																			
SB24 (1.5-2)		1415	6																			
SB24 (3-4)		1425	7																			
SB18 (1.5-2)		1425	8																			
SB18 (3-4)		1435	9																			
			10																			

RELINQUISHED BY:
Signature: Bart Stayhood
Printed Name: Bart Stayhood
Firm: EMCON
Date/Time: 6/18/93 1700

RECEIVED BY:
Signature: Kevin Howard
Printed Name: Kevin Howard
Firm: CAS
Date/Time: 6/18/93 1700

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ~~5~~ day
X Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ____

REPORT REQUIREMENTS
I. Routine Report
___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (Includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. # ____
Bill to: ____

SAMPLE RECEIPT:
Shipping VIA: SAMPLER
Shipping #: ____
Condition: OK
Lab No.: SJ93-0807

SPECIAL INSTRUCTIONS/COMMENTS:
Standard as per conversation w/ Kevin Elliot (turnaround) 6/21

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Blu Analytical Services inc.
1921 Ringwood Ave. • San Jose, CA 95131 • (408) 437-2400, FAX (408)437-9356

DATE 6/18/93 PAGE _____ OF _____

PROJECT NAME Westinghouse Emeryville DF88-001.14
PROJECT MNGR M. Simollon
COMPANY/ADDRESS Emcon
PHONE
SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GCMS 624/625/270	Volatile Organics GCMS 624/8240	Halogenated or Aromatic Volatiles 601/8010/8021	TPH as Gas/BTEX DHS LUFT / 8020	TPH as Diesel/HVBHC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, PO4, F, NO_2, Alk, TDS, TSS (circle)	Nh3-N, COD, Total-P, TKN, NO_3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols	PCBs (8080)				REMARKS
SB21 (1.5-2)	6/16/93	1442	11	Soil	1			X	X	X								X				
SB21 (3-4)		1455	12					X	X	X												
SB22 (1.5-2)		1446	13																			
SB22 (3-4)		1455	14					X	X	X								X				

RELINQUISHED BY:
Signature
Printed Name Emcon
Firm
6/18/93 1700
Date/Time

RECEIVED BY:
Signature Kevin Howard
Printed Name Kevin Howard
Firm CAS
6/18/93 1702
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr X 5 day
X Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
V I. Routine Report
___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. # _____
Bill to: _____

SAMPLE RECEIPT:
Shipping VIA: SAMPLER
Shipping #: _____
Condition: OK
Lab No.: SJ93-0802

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
* Standard (turnaround) as per conversation w/ Kevin Elliot 6/21

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

Columbia Analytical Services inc.

July 14, 1993

Service Request No: SJ93-0797

Vivian Hsiong
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Re: **Westinghouse, Emeryville/0F88-001.14**

Dear Ms. Hsiong:

Attached are the results of the soil samples submitted to our lab on June 18, 1993. For your reference, these analyses have been assigned our service request number SJ93-0797.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

Keoni A. Murphy
COLUMBIA ANALYTICAL SERVICES, INC.

KAM/kmh

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NR	Not Requested
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/OF88-001.14	**Date Extracted:**	06/28/93
Sample Matrix:	Soil	**Service Request No.:**	SJ93-0797

Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name	Date Analyzed	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Hydraulic Oil
SB4 (1.5-2)	07/01/93	ND	ND	ND	ND	9.
SB4 (3-4)	06/30/93	ND	ND	ND	ND	ND
SB3 (1.5-2)	07/08/93	ND	ND	ND	2.	ND
SB2 (1.5-2)	06/30/93	ND	ND	ND	ND	ND
SB2 (3-4)	06/30/93	ND	ND	ND	ND	ND
SB8 (1.5-2)	07/01/93	<10. *	<10. *	<10. *	<10. *	190.
SB8 (3-4)	06/30/93	ND	ND	ND	ND	21.
SB9 (1.5-2)	06/30/93	ND	ND	ND	ND	ND
SB9 (3-4)	06/30/93	ND	ND	ND	ND	ND
Method Blank	06/30/93	ND	ND	ND	ND	ND
MRL		1	1	1	1	5

* Raised MRL due to high analyte concentration requiring sample dilution.

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/OF88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Service Request No.:**	SJ93-0797

Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name	Date Analyzed	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Hydraulic Oil
SB7 (1.5-2)	07/02/93	ND	ND	ND	ND	17.
SB7 (3-4)	07/01/93	ND	ND	ND	ND	18.
SB12 (1.5-2)	07/01/93	ND	ND	ND	ND	30.
SB12 (3-4)	07/06/93	<100. *	<100. *	<100. *	9,400. **	<500. *
SB14 (1.5-2)	07/01/93	ND	ND	ND	ND	11.
SB14 (3-4)	07/01/93	ND	ND	ND	ND	ND
SB10 (1.5-2)	07/02/93	ND	ND	ND	ND	41.
SB10 (3-4)	07/06/93	<10. *	<10. *	<10. *	<10. *	320.
SB11 (1.5-2)	07/01/93	ND	ND	ND	ND	ND
SB11 (3-4)	07/01/93	ND	ND	ND	ND	28.
SB16 (1.5-2)	07/02/93	ND	ND	ND	ND	ND
SB16 (3-4)	07/01/93	ND	ND	ND	ND	ND
SB15 (1.5-2)	07/01/93	ND	ND	ND	ND	ND
SB15 (3-4)	07/01/93	ND	ND	ND	ND	ND
SB17 (1.5-2)	07/01/93	ND	ND	ND	ND	ND
MRL		1	1	1	1	5

* Raised MRL due to high analyte concentration requiring sample dilution.

** The sample contains components eluting in the Diesel range that were quantitated as Diesel. The chromatogram does not match the typical Diesel fingerprint.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/OF88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Service Request No.:**	SJ93-0797

Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name	Date Analyzed	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Hydraulic Oil
SB17 (3-4)	07/01/93	ND	ND	ND	ND	ND
SB13 (1.5-2)	07/02/93	ND	ND	ND	ND	ND
SB13 (3-4)	07/01/93	ND	ND	ND	ND	ND
SB20 (1.5-2)	07/01/93	ND	ND	ND	ND	ND
SB20 (3-4)	07/02/93	ND	ND	ND	ND	ND
SB23 (1.5-2)	07/02/93	ND	ND	ND	ND	ND
SB23 (3-4)	07/01/93	ND	ND	ND	ND	ND
Method Blank	07/01/93	ND	ND	ND	ND	ND
Method Blank	07/02/93	ND	ND	ND	ND	ND
Method Blank	07/06/93	ND	ND	ND	ND	ND
Method Blank	07/08/93	ND	ND	ND	ND	ND
MRL		1	1	1	1	5

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/OF88-001.14	**Date Extracted:**	06/30/93
Sample Matrix:	Soil	**Service Request No.:**	SJ93-0797

Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name	Date Analyzed	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Hydraulic Oil
SB3 (3-4)	07/06/93	ND	ND	ND	ND	11.
Method Blank	07/06/93	ND	ND	ND	ND	ND
MRL		1	1	1	1	5

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB4 (1.5-2)	SB4 (3-4)	SB3 (1.5-2)
Date Analyzed:		06/24/93	06/24/93	06/24/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin A Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB3 (3-4)	SB2 (1.5-2)	SB2 (3-4)
Date Analyzed:		06/24/93	06/24/93	06/24/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB8 (1.5-2)	SB8 (3-4)	SB9 (1.5-2)
Date Analyzed:		06/24/93	06/24/93	06/24/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin A Murphy Date: July 19, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB9 (3-4)	SB7 (1.5-2)	SB7 (3-4)
Date Analyzed:		06/24/93	06/24/93	06/24/93 *
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB12 (1.5-2)	SB12 (3-4)	SB14 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB14 (3-4)	SB10 (1.5-2)	SB10 (3-4)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Karen M Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB11 (1.5-2)	SB11 (3-4)	SB16 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/28/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB16 (3-4)	SB15 (1.5-2)	SB15 (3-4)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kathleen Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB17 (1.5-2)	SB17 (3-4)	SB13 (1.5-2)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Keenan Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB13 (3-4)	SB20 (1.5-2)	SB20 (3-4)
Date Analyzed:		06/28/93	06/28/93	06/28/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		SB23 (1.5-2)	SB23 (3-4)	Method Blank
Date Analyzed:		06/28/93 *	06/28/93 *	06/24/93
Analyte	**MRL**			
Benzene	0.05	ND	ND	ND
Toluene	0.1	ND	ND	ND
Ethylbenzene	0.1	ND	ND	ND
Total Xylenes	0.1	ND	ND	ND
TPH as Gasoline	5	ND	ND	ND

* This sample was part of the analytical batch started on June 28, 1993. However, it was analyzed after midnight so the actual date analyzed is June 29, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name:		Method Blank
Date Analyzed:		06/28/93
Analyte	**MRL**	
Benzene	0.05	ND
Toluene	0.1	ND
Ethylbenzene	0.1	ND
Total Xylenes	0.1	ND
TPH as Gasoline	5	ND

Approved by: Kevin O'Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name: / Date Analyzed:		SB4 (1.5-2) 06/24/93	SB4 (3-4) 06/24/93	SB3 (1.5-2) 06/24/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: Keith A Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB3 (3-4)	SB2 (1.5-2)	SB2 (3-4)
Date Analyzed:		06/24/93	06/24/93	06/24/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB8 (1.5-2)	SB8 (3-4)	SB9 (1.5-2)
Date Analyzed:		06/24/93	06/24/93	06/24/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: _____ Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB9 (3-4)	SB7 (1.5-2)	SB7 (3-4)
Date Analyzed:		06/24/93	06/24/93	06/24/93 *
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kathy Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB12 (1.5-2)	SB12 (3-4)	SB14 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kathleen A Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB14 (3-4)	SB10 (1.5-2)	SB10 (3-4)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: _____ Date: July 19, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB11 (1.5-2)	SB11 (3-4)	SB16 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93	06/25/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB16 (3-4)	SB15 (1.5-2)	SB15 (3-4)
Date Analyzed:		06/25/93	06/25/93	06/25/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: Robert Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB17 (1.5-2)	SB17 (3-4)	SB13 (1.5-2)
Date Analyzed:		06/25/93	06/25/93	06/25/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

Approved by: Kathy Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		SB13 (3-4)	SB20 (1.5-2)	SB20 (3-4)
Date Analyzed:		06/25/93	06/25/93 *	06/25/93 *
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 25, 1993. However, it was analyzed after midnight so the actual date analyzed is June 26, 1993.

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name: / Date Analyzed:		SB23 (1.5-2) 06/25/93 *	SB23 (3-4) 06/25/93 *	Method Blank 06/24/93
Analyte	**MRL**			
Dichlorodifluoromethane (Freon 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (Freon 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND	ND	ND
Methylene Chloride	0.05	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 25, 1993. However, it was analyzed after midnight so the actual date analyzed is June 26, 1993.

Approved by: Keon M Murphy Date: July 19, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name:		Method Blank
Date Analyzed:		06/25/93
Analyte	**MRL**	
Dichlorodifluoromethane (Freon 12)	0.1	ND
Chloromethane	0.1	ND
Vinyl Chloride	0.05	ND
Bromomethane	0.05	ND
Chloroethane	0.05	ND
Trichlorofluoromethane (Freon 11)	0.05	ND
1,1-Dichloroethene	0.05	ND
Trichlorotrifluoroethane (Freon 113)	0.05	ND
Methylene Chloride	0.05	ND
trans-1,2-Dichloroethene	0.05	ND
cis-1,2-Dichloroethene	0.05	ND
1,1-Dichloroethane	0.05	ND
Chloroform	0.05	ND
1,1,1-Trichloroethane (TCA)	0.05	ND
Carbon Tetrachloride	0.05	ND
1,2-Dichloroethane	0.05	ND
Trichloroethene (TCE)	0.05	ND
1,2-Dichloropropane	0.05	ND
Bromodichloromethane	0.05	ND
2-Chloroethyl Vinyl Ether	0.5	ND
trans-1,3-Dichloropropene	0.05	ND
cis-1,3-Dichloropropene	0.05	ND
1,1,2-Trichloroethane	0.05	ND
Tetrachloroethene (PCE)	0.05	ND
Dibromochloromethane	0.05	ND
Chlorobenzene	0.05	ND
Bromoform	0.05	ND
1,1,2,2-Tetrachloroethane	0.05	ND
1,3-Dichlorobenzene	0.1	ND
1,4-Dichlorobenzene	0.1	ND
1,2-Dichlorobenzene	0.1	ND

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/18/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB4 (1.5-2)	SB4 (3-4)	SB3 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kathleen Murphy Date: July 14, 1993

1024 Ringwood Avenue • San Jose, California 95131 • Telephone 408/437-2400 • Fax 408/437-0256

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/18/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB3 (3-4)	SB2 (1.5-2)	SB2 (3-4)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kathleen A Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/18/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB8 (1.5-2)	SB8 (3-4)	SB9 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	<0.2 **	ND	ND
Aroclor 1221	0.1	<0.2 **	ND	ND
Aroclor 1232	0.1	<0.2 **	ND	ND
Aroclor 1242	0.1	<0.2 **	ND	ND
Aroclor 1248	0.1	<0.2 **	ND	ND
Aroclor 1254	0.1	<0.2 **	ND	ND
Aroclor 1260	0.1	1.	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

** Raised MRL due to high analyte concentration requiring sample dilution.

Approved by: Kevin A Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/18/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB9 (3-4)	Method Blank
Date Analyzed:		06/24/93 *	06/24/93
Analyte	**MRL**		
Aroclor 1016	0.1	ND	ND
Aroclor 1221	0.1	ND	ND
Aroclor 1232	0.1	ND	ND
Aroclor 1242	0.1	ND	ND
Aroclor 1248	0.1	ND	ND
Aroclor 1254	0.1	ND	ND
Aroclor 1260	0.1	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/22/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB12 (1.5-2)	SB12 (3-4)	SB14 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Karen A Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/22/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB14 (3-4)	SB10 (1.5-2)	SB10 (3-4)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/22/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB11 (1.5-2)	SB11 (3-4)	SB16 (1.5-2)
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/22/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB7 (1.5-2)	SB7 (3-4)	Method Blank
Date Analyzed:		06/24/93 *	06/24/93 *	06/24/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Tom Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB16 (3-4)	SB15 (1.5-2)	SB15 (3-4)
Date Analyzed:		06/29/93	06/29/93	06/29/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 29, 1993. However, it was analyzed after midnight so the actual date analyzed is June 30, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB17 (1.5-2)	SB17 (3-4)	SB13 (1.5-2)
Date Analyzed:		06/29/93 *	06/29/93 *	06/29/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 29, 1993. However, it was analyzed after midnight so the actual date analyzed is June 30, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB13 (3-4)	SB20 (1.5-2)	SB20 (3-4)
Date Analyzed:		06/29/93 *	06/29/93 *	06/29/93 *
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 29, 1993. However, it was analyzed after midnight so the actual date analyzed is June 30, 1993.

Approved by: Kathleen M Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Work Order No.:**	SJ93-0797

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name:		SB23 (1.5-2)	SB23 (3-4)	Method Blank
Date Analyzed:		06/29/93 *	06/29/93 *	06/29/93
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	ND	ND	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	ND	ND	ND
Aroclor 1260	0.1	ND	ND	ND

* This sample was part of the analytical batch started on June 29, 1993. However, it was analyzed after midnight so the actual date analyzed is June 30, 1993.

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery *p*-Terphenyl
SB4 (1.5-2)	07/01/93	76.
SB4 (3-4)	06/30/93	96.
SB3 (1.5-2)	07/08/93	86.
SB3 (3-4)	07/06/93	80.
SB2 (1.5-2)	06/30/93	76.
SB2 (3-4)	06/30/93	70.
SB8 (1.5-2)	07/01/93	77.
SB8 (3-4)	06/30/93	77.
SB9 (1.5-2)	06/30/93	74.
SB9 (3-4)	06/30/93	69.
SB7 (1.5-2)	07/02/93	76.
SB7 (3-4)	07/01/93	78.
SB12 (1.5-2)	07/01/93	96.
SB12 (3-4)	07/06/93	*
SB14 (1.5-2)	07/01/93	72.
SB14 (3-4)	07/01/93	72.
SB10 (1.5-2)	07/02/93	71.
SB10 (3-4)	07/06/93	90.
SB11 (1.5-2)	07/01/93	92.
SB11 (3-4)	07/01/93	94.
	CAS Acceptance Criteria	46-154

* No surrogate spike recovery was calculated due to high sample concentration requiring a dilution.

Approved by: Kathleen M Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3550/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery *p*-Terphenyl
SB16 (1.5-2)	07/02/93	83.
SB16 (3-4)	07/01/93	75.
SB15 (1.5-2)	07/01/93	80.
SB15 (3-4)	07/01/93	92.
SB17 (1.5-2)	07/01/93	91.
SB17 (3-4)	07/01/93	78.
SB13 (1.5-2)	07/02/93	68.
SB13 (3-4)	07/01/93	83.
SB20 (1.5-2)	07/01/93	66.
SB20 (3-4)	07/02/93	86.
SB23 (1.5-2)	07/02/93	82.
SB23 (3-4)	07/01/93	77.
SB4 (1.5-2) MS	06/30/93	68.
SB4 (1.5-2) DMS	06/30/93	73.
SB7 (1.5-2) MS	07/02/93	83.
SB7 (1.5-2) DMS	07/02/93	81.
SB13 (3-4) MS	07/01/93	77.
SB13 (3-4) DMS	07/01/93	92.
Method Blank	06/30/93	83.
Method Blank	07/01/93	95.
Method Blank	07/02/93	88.
Method Blank	07/06/93	94.
Method Blank	07/08/93	87.

CAS Acceptance Criteria 46-154

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Date Extracted: 06/28/93
Date Analyzed: 06/30/93
Service Request No.: SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Hydrocarbon Scan
EPA Methods 3510/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name: SB4 (1.5-2)

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Criteria
Diesel	100.	9.0 *	64.	95.	55.	86.	45-145

* Sample Result is Hydraulic Oil, not Diesel. Calculation of spike recovery may be affected.

Approved by: Robert Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Date Analyzed:**	07/02/93
		Service Request No.:	SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Hydrocarbon Scan
EPA Methods 3510/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name: SB7 (1.5-2)

			Spike Result		Percent Recovery		
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria
Diesel	100.	17. *	72.	73.	55.	56.	45-145

* Sample result is Hydraulic Oil, not Diesel. Calculation of spike may be affected.

Approved by: Robert Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Date Analyzed:**	07/01/93
		Service Request No.:	SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Hydrocarbon Scan
EPA Methods 3510/California DHS LUFT Method
mg/Kg (ppm)
As Received Basis

Sample Name: SB13 (3-4)

			Spike Result		Percent Recovery		
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria
Diesel	100	ND	69.	86.	69.	86.	45-145

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery α,α,α-Trifluorotoluene
SB4 (1.5-2)	06/24/93	90.
SB4 (3-4)	06/24/93	89.
SB3 (1.5-2)	06/24/93	91.
SB3 (3-4)	06/24/93	91.
SB2 (1.5-2)	06/24/93	91.
SB2 (3-4)	06/24/93	92.
SB8 (1.5-2)	06/24/93	87.
SB8 (3-4)	06/24/93	90.
SB9 (1.5-2)	06/24/93	89.
SB9 (3-4)	06/24/93	89.
SB7 (1.5-2)	06/24/93	90.
SB7 (3-4)	06/24/93	89.
SB12 (1.5-2)	06/24/93	89.
SB12 (3-4)	06/24/93	90.
SB14 (1.5-2)	06/24/93	88.
SB14 (3-4)	06/24/93	90.
SB10 (1.5-2)	06/24/93	88.
SB10 (3-4)	06/24/93	89.
SB11 (1.5-2)	06/24/93	89.
SB11 (3-4)	06/24/93	90.
CAS Acceptance Criteria		63-137

Approved by: Kevin O'Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery α,α,α-Trifluorotoluene
SB16 (1.5-2)	06/28/93	85.
SB16 (3-4)	06/28/93	88.
SB15 (1.5-2)	06/28/93	88.
SB15 (3-4)	06/28/93	85.
SB17 (1.5-2)	06/28/93	86.
SB17 (3-4)	06/28/93	87.
SB13 (1.5-2)	06/28/93	88.
SB13 (3-4)	06/28/93	88.
SB20 (1.5-2)	06/28/93	88.
SB20 (3-4)	06/28/93	88.
SB23 (1.5-2)	06/28/93	88.
SB23 (3-4)	06/28/93	88.
SB3 (1.5-2) MS	06/24/93	92.
SB3 (1.5-2) DMS	06/24/93	90.
SB7 (1.5-2) MS	06/24/93	96.
SB7 (1.5-2) DMS	06/24/93	97.
SB16 (3-4) MS	06/28/93	89.
SB16 (3-4) DMS	06/28/93	91.
Method Blank	06/24/93	81.
Method Blank	06/28/93	89.
	CAS Acceptance Criteria	63-137

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Matrix Spike Summary
BTE
EPA Methods 5030/8020
mg/Kg (ppm)
As Received Basis

Sample Name: SB3 (1.5-2)
Date Analyzed: 06/24/93

			Spike Result		Percent Recovery		
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria
Benzene	2.5	ND	2.13	2.27	85.	91.	55-138
Toluene	2.5	ND	2.08	2.28	83.	91.	60-127
Ethylbenzene	2.5	ND	2.13	2.34	85.	94.	56-128

Sample Name: SB16 (3-4)
Date Analyzed: 06/28/93

			Spike Result		Percent Recovery		
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria
Benzene	2.5	ND	2.22	2.16	89.	86.	55-138
Toluene	2.5	ND	2.28	2.17	91.	87.	60-127
Ethylbenzene	2.5	ND	2.29	2.19	92.	88.	56-128

Approved by: Kenneth Murphy Date: July 14 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Matrix Spike Summary
BTE
EPA Methods 5030/8020
mg/Kg (ppm)
As Received Basis

Sample Name: SB7 (1.5-2)
Date Analyzed: 06/24/93

			Spike Result		Percent Recovery		
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria
TPH as Gasoline	25.0	ND	22.1	22.4	88.	90.	69-131

* The DMS of this sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Surrogate Recovery Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/8010

Sample Name	Date Analyzed	Percent Recovery 4-Bromofluorobenzene
SB4 (1.5-2)	06/24/93	110.
SB4 (3-4)	06/24/93	116.
SB3 (1.5-2)	06/24/93	116.
SB3 (3-4)	06/24/93	110.
SB2 (1.5-2)	06/24/93	108.
SB2 (3-4)	06/24/93	115.
SB8 (1.5-2)	06/24/93	108.
SB8 (3-4)	06/24/93	109.
SB9 (1.5-2)	06/24/93	110.
SB9 (3-4)	06/24/93	123.
SB7 (1.5-2)	06/24/93	103.
SB7 (3-4)	06/24/93	111.
SB12 (1.5-2)	06/24/93	121.
SB12 (3-4)	06/24/93	116.
SB14 (1.5-2)	06/24/93	109.
SB14 (3-4)	06/24/93	108.
SB10 (1.5-2)	06/24/93	116.
SB10 (3-4)	06/24/93	112.
SB11 (1.5-2)	06/24/93	120.
SB11 (3-4)	06/24/93	94.
	CAS Acceptance Criteria	70-130

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Service Request No.:**	SJ93-0797
Sample Matrix:	Soil		

Surrogate Recovery Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/8010

Sample Name	Date Analyzed	Percent Recovery 4-Bromofluorobenzene
SB16 (1.5-2)	06/25/93	104.
SB16 (3-4)	06/25/93	106.
SB15 (1.5-2)	06/25/93	111.
SB15 (3-4)	06/25/93	100.
SB17 (1.5-2)	06/25/93	114.
SB17 (3-4)	06/25/93	104.
SB13 (1.5-2)	06/25/93	85.
SB13 (3-4)	06/25/93	109.
SB20 (1.5-2)	06/25/93	116.
SB20 (3-4)	06/25/93	105.
SB23 (1.5-2)	06/25/93	104.
SB23 (3-4)	06/25/93	108.
SB11 (3-4) MS	06/24/93	114.
SB11 (3-4) DMS	06/24/93	105.
SB4 (1.5-2) MS	06/24/93	113.
SB4 (1.5-2) DMS	06/24/93	100.
SB16 (1.5-2) MS	06/25/93	104.
SB16 (1.5-2) DMS	06/25/93	112.
Method Blank	06/24/93	105.
Method Blank	06/25/93	123.
CAS Acceptance Criteria		70-130

Approved by: Kathleen Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name: SB11 (3-4)
Date Analyzed: 06/24/93

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria
1,1-Dichloroethene	0.5	ND	0.44	0.43	88.	86.	28-167
Trichloroethene	0.5	ND	0.48	0.49	96.	98.	35-146
Tetrachloroethene	0.5	ND	0.48	0.48	96.	96.	26-162

Sample Name: SB4 (1.5-2)
Date Analyzed: 06/24/93

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria
1,1-Dichloroethene	0.5	ND	0.55	0.56	110.	112.	28-167
Trichloroethene	0.5	ND	0.46	0.33	92.	66.	35-146
Tetrachloroethene	0.5	ND	0.47	0.41	94.	82.	26-162

Approved by: _____ Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: Westinghouse, Emeryville/0F88-001.14
Sample Matrix: Soil

Date Received: 06/18/93
Service Request No.: SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/8010
mg/Kg (ppm)
As Received Basis

Sample Name: SB16 (1.5-2)
Date Analyzed: 06/25/93

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria
1,1-Dichloroethene	0.5	ND	0.52	0.61	104.	122.	28-167
Trichloroethene	0.5	ND	0.46	0.47	92.	94.	35-146
Tetrachloroethene	0.5	ND	0.44	0.48	88.	96.	26-162

Approved by: Kevin Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Work Order No.:**	SJ93-0797
Sample Matrix:	Soil		

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080

Sample Name	Date Analyzed	Percent Recovery Decachlorobiphenyl
SB4 (1.5-2)	06/24/93	87.
SB4 (3-4)	06/24/93	86.
SB3 (1.5-2)	06/24/93	89.
SB3 (3-4)	06/24/93	85.
SB2 (1.5-2)	06/24/93	83.
SB2 (3-4)	06/24/93	83.
SB8 (1.5-2)	06/24/93	88.
SB8 (3-4)	06/24/93	82.
SB9 (1.5-2)	06/24/93	83.
SB9 (3-4)	06/24/93	77.
SB7 (1.5-2)	06/24/93	89.
SB7 (3-4)	06/24/93	86.
SB12 (1.5-2)	06/24/93	86.
SB12 (3-4)	06/24/93	57.
SB14 (1.5-2)	06/24/93	84.
SB14 (3-4)	06/24/93	83.
SB10 (1.5-2)	06/24/93	82.
SB10 (3-4)	06/24/93	87.
SB11 (1.5-2)	06/24/93	84.
SB11 (3-4)	06/24/93	82.
	CAS Acceptance Criteria	53-120

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Work Order No.:**	SJ93-0797
Sample Matrix:	Soil		

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080

Sample Name	Date Analyzed	Percent Recovery Decachlorobiphenyl
SB16 (1.5-2)	06/24/93	84.
SB16 (3-4)	06/29/93	76.
SB15 (1.5-2)	06/29/93	77.
SB15 (3-4)	06/29/93	75.
SB17 (1.5-2)	06/29/93	76.
SB17 (3-4)	06/29/93	76.
SB13 (1.5-2)	06/29/93	76.
SB13 (3-4)	06/29/93	78.
SB20 (1.5-2)	06/29/93	74.
SB20 (3-4)	06/29/93	84.
SB23 (1.5-2)	06/29/93	77.
SB23 (3-4)	06/29/93	74.
SB4 (3-4) MS	06/24/93	88.
SB4 (3-4) DMS	06/24/93	87.
SB7 (1.5-2) MS	06/24/93	89.
SB7 (1.5-2) DMS	06/24/93	85.
SB23 (3-4) MS	06/29/93	72.
SB23 (3-4) DMS	06/29/93	74.
Method Blank	06/24/93	90.
Method Blank	06/24/93	86.
Method Blank	06/29/93	67.
CAS Acceptance Criteria		53-120

Approved by: Kathleen Mongeluzzo Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/18/93
Sample Matrix:	Soil	**Date Analyzed:**	06/24/93 *
		Work Order No.:	SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name: SB4 (3-4)

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Criteria	Relative Percent Difference
Aroclor 1260	0.167	0.045 **	0.200	0.206	93.	97.	62-154	3.

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

** The sample contains Aroclor 1260 at a concentration below the MRL of 0.1 ppm. However, since the level of Aroclor 1260 in the sample is significant to the spike recovery calculation, the below MRL value is shown here.

Approved by: _____ Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/22/93
Sample Matrix:	Soil	**Date Analyzed:**	06/24/93 *
		Work Order No.:	SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name: SB7 (1.5-2)

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Criteria	Relative Percent Difference
Aroclor 1260	0.167	ND	0.143	0.138	85.	83.	62-154	3.

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

Approved by: Kenneth Murphy Date: July 14, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Associates	**Date Received:**	06/18/93
Project:	Westinghouse, Emeryville/0F88-001.14	**Date Extracted:**	06/29/93
Sample Matrix:	Soil	**Date Analyzed:**	06/29/93 *
		Work Order No.:	SJ93-0797

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550/8080
mg/Kg (ppm)
As Received Basis

Sample Name: SB23 (3-4)

			Spike Result		Percent Recovery			
Analyte	Spike Level	Sample Result	MS	DMS	MS	DMS	CAS Acceptance Criteria	Relative Percent Difference
Aroclor 1260	0.167	0.029 **	0.132	0.133	62.	62.	62-154	<1.

* This sample was part of the analytical batch started on June 24, 1993. However, it was analyzed after midnight so the actual date analyzed is June 25, 1993.

** The sample contains Aroclor 1260 at a concentration below the MRL of 0.1 ppm. However, since the level of Aroclor is significant to the spike recovery calculation, the below MRL value is shown.

Approved by: Kathy Murphy Date: July 14, 1993

Columbia Analytical Services, Inc.

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 6/18/93 PAGE 1 OF 1

PROJECT NAME Westinghouse Emeryville DF88-001.14

PROJECT MNGR. M. Smiley

COMPANY/ADDRESS EMCON

PHONE

SAMPLERS SIGNATURE Bart Stafford

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 or 602/8020	TPH as Gas/BTEX DHS LUFT (8020)	TPH as Diesel/HBHC DHS LUFT	TPPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, PO_4, F, NO_2, Alk, TDS, TSS (circle)	NH_3-N, COD, Total-P, TKN, NO_3 (circle)	Total Organic Carbon TOC 415.2/9060	Total Phenols	PCBs (8080)				REMARKS
SB4(15-2)	6/17/93	9:45	1	Soil	1			X	X	X								X				
SB4(3-4)		10:03	2		1																	
SB3(15-2)		10:05	3		1																	
SB3(3-4)		10:17	4		1																	
SB2(15-2)		10:23	5		1																	
SB2(3-4)		10:39	6		1																	
SB8(15-2)		10:36	7		1																	
SB8(3-4)		11:13	8		1																	
SB9(15-2)		11:00	9		1																	
SB9(3-4)		11:16	10		1																	

RELINQUISHED BY:
Signature: Bart Stafford
Printed Name: Bart Stafford
Firm: EMCON
Date/Time: 6/18/93 910

RECEIVED BY:
Signature: Lorna Howard
Printed Name: Lorna Howard
Firm: CAS
Date/Time: 6/18/93 0910

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr X 5 day
X Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. #
Bill to:

SAMPLE RECEIPT:
Shipping VIA:
Shipping #:
Condition:
Lab No: 0797

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

Columbia Analytical Services, Inc.

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 6/18/93 PAGE 2 OF 4

PROJECT NAME Westinghouse Emeryville OF88 CO1.14

PROJECT MNGR. M. Smolley

COMPANY/ADDRESS EMCON

PHONE

SAMPLERS SIGNATURE Bart Stafford

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐	TPH as Gas/BTEX 602/8020 ☐	DHS LUFT (8020)	TPH as Diesel/Extr/HC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, PO_4, F, NO_2, Alk, TDS, TSS (circle)	NH_3-N, COD, Total-P, TKN, NO_3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols	PCB's (8080)				REMARKS
SB 7 (1.5-2)	6/17/93	11:38	11	Soil	1			X	X	X									X				
SB 7 (3-4)		11:51	12		1																		
SB 12 (1.5-2)		11:42	13		1																		
SB 12 (3-4)		12:42	14		1																		
SB 14 (1.5-2)		12:06	15		1																		
SB 14 (3-4)		12:23	16		1																		
SB 10 (1.5-2)		12:39	17		1																		
SB 10 (3-4)		12:54	18		1																		
SB 11 (1.5-2)		14:10	19		1																		
SB 11 (3-4)	"	14:19	20	"	1			*	*	*									*				

RELINQUISHED BY:

Signature: Bart Stafford

Printed Name: Bart Stafford

Firm: EMCON Assoc.

Date/Time: 6/18/93 7:10

RECEIVED BY:

Signature: Kevin Howard

Printed Name: Kevin Howard

Firm: CAS

Date/Time: 6/18/93 0910

TURNAROUND REQUIREMENTS:

___ 24 hr ___ 48 hr X 5 day

___ Standard (~ 10-15 working days)

___ Provide Verbal Preliminary Results

___ Provide FAX Preliminary Results

Requested Report Date: _____

REPORT REQUIREMENTS

X I. Routine Report

X II. Report (includes DUP,MS, MSD, as required, may be charged as samples)

___ III. Data Validation Report (includes All Raw Data)

___ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O. #: _____

Bill to: _____

SAMPLE RECEIPT:

Shipping VIA: Sample

Shipping #: _____

Condition: OK

Lab No.: 5193-0797

RELINQUISHED BY:

Signature

Printed Name

Firm

Date/Time

RECEIVED BY:

Signature

Printed Name

Firm

Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services, Inc.
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DATE 6/18/93 PAGE 3 OF 4

PROJECT NAME Westinghouse Emeryville OF88-004.14
PROJECT MNGR. M. Sandler
COMPANY/ADDRESS EMCON
PHONE
SAMPLERS SIGNATURE Bart Stafford

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010; 8021	TPH as Gas/BTEX DHS LUFT/8020	TPH as Diesel/HB/HC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO4, PO4, F, NO2, Alk, TDS, TSS (circle)	NH3-N, COD, Total-P, TKN, NO3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols	PCB's (8080)				REMARKS
SB16(1.5-2)	6/17/93	14:29	21	Soil	1			X	X	X								X				
SB16(3-4)		14:37	22		1																	
SB15(1.5-2)		1422	23		1																	
SB15(3-4)		1431	24		1																	
SB17(1.5-2)		1446	25		1																	
SB17(3-4)		1500	26		1																	
SB13(1.5-2)		1448	27		1																	
SB13(3-4)		1507	28		1																	
SB20(1.5-2)		1535	29		1																	
SB20(3-4)		1552	30		1																	

ANALYSIS REQUESTED

RELINQUISHED BY:
Signature: Bart Stafford
Printed Name: Bart Stafford
Firm: EMCON
Date/Time: 6/18/93 9:10

RECEIVED BY:
Signature: Kevin Howard
Printed Name: Kevin Howard
Firm: CAS
Date/Time: 6/18/93 0910

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr X 5 day
X Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ____

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. # ____
Bill to: ____

SAMPLE RECEIPT:
Shipping VIA: Sample
Shipping #: ____
Condition: OK
Lab No: 5193-0717

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

Columbia Analytical Services, Inc.

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 6/20/93 PAGE 4 OF 4

PROJECT NAME Westinghouse, Emeryville # OF98-001.14

PROJECT MNGR. M. Small

COMPANY/ADDRESS Emcon

PHONE

SAMPLERS SIGNATURE Bart Stoffel

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX DHS LUFT/8020	TPH as Diesel/HBHC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO4, PO4, F, NO2, Alk, TDS, TSS (circle)	NH3-N, COD, Total-P, TKN, NO3 (circle)	Total Organic Carbon TOC 415.8/9060	Total Phenols	PCB's (8080)				REMARKS
SB23(1.5-2)	6/17/93	1548	31	Soil	1			X	X	X								X				
SB23(3-4)	6/17/93	1601	32	Soil	1			X	X	X								X				

RELINQUISHED BY:
Signature: Bart Stoffel
Printed Name: Bart Stoffel
Firm: EMCON
Date/Time: 6/18/93 9:10

RECEIVED BY:
Signature: Kevin Howard
Printed Name: Kevin Howard
Firm: CAS
Date/Time: 6/18/93 0910

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ___ 5 day
___ Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date

REPORT REQUIREMENTS
___ I. Routine Report
X II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. #
Bill to:

SAMPLE RECEIPT:
Shipping VIA: Standard
Shipping #:
Condition: OK
Lab No: 5793-0797

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

APPENDIX B

EVALUATION OF LABORATORY QUALITY CONTROL RESULTS

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The laboratory quality control (QC) review consisted of checking adherence to the required holding times for all analyses and evaluating laboratory method blanks, surrogate spike recoveries (for organic analysis), matrix spike (MS), and matrix spike duplicate (MSD) recoveries, and method reporting limits (MRLs).

All analyses were performed within the required holding times. No parameters were detected in the method blanks above their MRLs. Surrogate recoveries were within the established acceptance criteria, with one exception. The surrogate recovery for HBHC's in sample SB-12 (at 3 feet) could not be calculated. The sample was diluted 100:1 to quantitate the diesel concentration. In doing so, the surrogate concentration was diluted below quantitation levels. The quality (accuracy) of data does not appear to be affected since the surrogate recoveries in the other samples were acceptable.

MS and MSD recoveries were within the established acceptance criteria, indicating acceptable data accuracy. The relative percent differences (RPDs) between MS and MSD recoveries were also within the established criteria, indicating acceptable data precision.

Routine MRLs were used to quantify and report the analytical results, with the following exceptions. Sample dilutions resulted in elevated MRLs in samples SB-6 (at 4.5 feet), SB-8 (at 1.5 feet), SB-10 (at 3 feet), and SB-12 (at 3 feet) for HBHCs and in sample SB-8 (at 1.5 feet) for PCBs. These sample dilutions were required to quantitate elevated analyte concentrations in the samples. The quality of the data does not appear to be affected.

A review of the laboratory QC data indicates that the data are of acceptable quality and can be used for site characterization.