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Harding Lawson Associates

Engineering and Environmental Services

HLA

Groundwater Monitoring and Sampling
September and October 1998
Boeing Realty Corporation C-6 Facility
Los Angeles, California

Prepared for

Boeing Realty Corporation
4060 Lakewood Boulevard, 6th Floor
Long Beach, California 90808-1700

HLA Project No. 42455 1

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EXECUTIVE SUMMARY

This document summarizes monthly groundwater monitoring and sampling performed by Harding Lawson Associates in September and October 1998 at the Boeing Realty Corporation C-6 facility, 19503 South Normandie Avenue, Los Angeles, California (the Site, Plate 1).

The following is a summary of field activities performed at the Site during the reporting period:

- Monthly groundwater level monitoring and sampling was performed in September and October 1998 using 18 pre-existing temporary and permanent groundwater monitoring wells (Plate 2). Each groundwater sample was analyzed for volatile organic compounds (VOCs), dissolved iron, chloride, nitrate/nitrite, CO_2, ethane, and methane.

- Temporary wellhead monuments were installed in November 1998 to protect groundwater monitoring wells located in the construction area.

VOCs were detected in groundwater samples from each well. Dichloroethene was detected above 100 micrograms per liter (µg/l) in 12 of the 18 wells sampled, with a maximum concentration of 41,000 µg/l in WCC-03S. Trichloroethene was detected above 100 µg/l in 17 of the 18 wells sampled, with a maximum concentration of 32,000 µg/l at TMW-02. 1,1,1-trichloroethane was detected above 100 µg/l in two wells, with a maximum concentration of 5,100 µg/l. Toluene and/or benzene was detected in six wells, with a maximum concentration of 68,000 µg/l in WCC-03S. The highest VOC concentrations were found in wells near the northeast corner of Building 1 and downgradient wells to the south and southwest. Lower VOC concentrations were detected in upgradient and crossgradient wells.

1.0 INTRODUCTION

This document presents the results of monthly groundwater monitoring and sampling conducted by Harding Lawson Associates (HLA) in September and October 1998 at the Boeing Realty Corporation (BRC) C-6 facility, 19503 South Normandie Avenue, Los Angeles, California (the Site, Plate 1). Groundwater depths were measured and groundwater samples were collected from 18 groundwater monitoring wells in the area of Buildings 1 and 2 (Plate 2). The wells included nine temporary groundwater monitoring wells installed in June and July 1998 by Kennedy/Jenks Consultants (Kennedy/Jenks) and nine pre-existing groundwater monitoring wells installed by Woodward-Clyde Consultants (Woodward-Clyde). The objective of this effort was to report groundwater information collected at locations within and adjacent to Buildings 1 and 2.

The facility occupies approximately 170 acres and is bounded on the north by West 190th Street, on the east by the railroad tracks along South Normandie Avenue, on the south by Montrose Chemical and residential properties, and on the west by Western Avenue, Capitol Metals, and International Light Metals (Plate 1).

Buildings 1 and 2 are located in the eastern part of the facility, approximately ¼ mile south of 190th Street and approximately 250 feet west of Normandie Avenue. The two buildings cover an area of about 33 acres.

2.0 HYDROGEOLOGIC SETTING

This section provides a brief summary of regional and local geology and hydrogeology. Much of this information was reported by Kennedy/Jenks following the installation of the temporary monitoring wells TMW-01 through TMW-09 in July 1998.

The facility is located on a broad plain at an elevation of approximately 50 feet above mean sea level (MSL). The California Department of Water Resources (DWR) and U.S. Geological Survey (USGS) define this area as the Torrance Plain, a Pleistocene-age marine surface and a subdivision of the Coastal Plain of Los Angeles and Orange Counties. The ground surface in this area is generally flat with an eastward gradient of about 20 feet per mile (less than ½ percent). Surface drainage is generally toward the Dominguez Channel, about a mile to the east. The Dominguez Channel, in turn, flows southeastward toward the Los Angeles and Long Beach Harbors in San Pedro Bay.

The surface sediments in this area are assigned to the Lakewood Formation (DWR, 1961), a unit defined to include essentially all of the upper Pleistocene sediments in the Los Angeles Coastal Plain area. The Lakewood Formation includes deposits of both marine and continental origin, representing stream transport and sedimentation along the Pleistocene marine plain. In the facility area, the Lakewood Formation may include the Semiperched aquifer, the Bellflower aquiclude, and the Gage aquifer and extend from the ground surface to a depth of approximately 200 feet. The Semiperched aquifer includes deposits described as terrace cover (Poland et al., 1959). The extent and thickness of this unit are not rigorously defined, but the unit appears to include near-surface water-bearing sediments in the area of the facility. The Bellflower aquiclude is described as a heterogeneous mixture of continental, marine, and windblown sediments, mainly consisting of clays with sandy and gravely lenses (DWR, 1961). The base of the Bellflower aquiclude is about 100 feet below sea level (about 150 feet below ground surface [bgs]) in the facility area. The Gage aquifer is a water-bearing zone of fine- to medium-grained sand and gravel confined by the Bellflower aquiclude. It is reported to be about 40 feet thick in the facility area and is described as being of secondary importance as a water source (DWR, 1961).

The Lakewood Formation is underlain by the lower Pleistocene San Pedro Formation, which extends from approximately 200 feet bgs to about 1,000 feet bgs in the facility area. Major water-bearing zones within the

San Pedro Formation are the Lynwood aquifer and the Silverado aquifer. In the facility area, the Lynwood is reported to extend from approximately 250 to 350 feet bgs, and the Silverado is reported to extend from about 475 feet bgs to 675 feet bgs (DWR, 1961). The Silverado is a source of drinking water. Undifferentiated fine-grained sediments, ranging in thickness from approximately 100 to 150 feet, separate the Gage, Lynwood, and Silverado aquifers (DWR, 1961).

Data reported by Kennedy/Jenks and Woodward-Clyde suggest that the uppermost water-bearing zone at the facility is first encountered at depths of 60 to 70 feet and is unconfined. Regionally, this uppermost water-bearing zone may be considered part of the Semiperched aquifer and is separated from the deeper zones by the Bellflower aquiclude (Kennedy/Jenks, 1998).

Most of the monitoring wells at the facility are completed within the Semiperched aquifer, with screened intervals ranging from 60 to 90 feet bgs. Two deeper wells, WCC-1D and WCC-3D, are completed in a deeper zone with screened intervals from 120 to 140 feet bgs (Woodward-Clyde, 1990).

The hydraulic gradient in the uppermost groundwater is generally toward the south-southeast. The July 1998 groundwater gradient was 0.001 foot per foot (ft/ft) (Kennedy/Jenks, 1998). Groundwater samples from 15 observation wells at the facility have been sampled and analyzed on a quarterly basis since 1992.

Subsurface soils are reported to consist of fine sand, silt, and clay. Discrete soil units have been termed Q1 through Q5 and were described in detail following the installation of the temporary monitoring wells (Kennedy/Jenks, 1998). The majority of the onsite groundwater monitoring wells are apparently screened in unit Q5, described as predominantly silty sand and sandy silt. Exceptions are monitoring wells WCC-1D and WCC-3D, with total depths of approximately 140 feet bgs. These wells are potentially screened into the Gage aquifer.

3.0 GROUNDWATER MONITORING AND SAMPLING PROGRAM

3.1 Groundwater Level Monitoring

Monthly groundwater monitoring was performed in 18 wells in September and October 1998. Depth to groundwater was measured in each well (Plate 2) from the top of the well casing. Groundwater elevations were calculated using the surveyed elevation of the top of each well casing. The data from September and October 1998 were contoured and are depicted on Plates 2 and 3, respectively. In general, groundwater flows toward the south-southwest at a gradient of approximately 0.001 ft/ft. Groundwater monitoring data are presented in Table 1.

3.2 Monthly Sampling

A total of 18 monitoring wells were purged and sampled in September and October 1998. During each sampling event, each groundwater monitoring well was purged of a minimum of three well-casing volumes of groundwater or until dry by using an electric submersible pump. A Grundfos Rediflow II or a Whale Pump was used, depending on the necessary purge volume. The Whale Pump is battery operated and was used where lower purge volumes were required. Temperature, pH, and electrical conductivity of the purge water were measured and recorded. Groundwater samples were collected in laboratory-supplied 40-milliliter vials from near the top of the water column in each well using a Teflon bailer. Each sample was labeled and stored in an ice-cooled chest. Two equipment rinsate blank samples and two duplicate samples were collected for quality assurance/quality control (QA/QC) purposes. Groundwater sampling field data forms for each well are included in Appendix A.

Purged groundwater was placed in 630-gallon poly tanks and stored onsite. Following profiling, the purge water was transported offsite for treatment and disposal.

3.3 Chemical Analysis

Chemical analysis of groundwater samples collected in September and October 1998 was performed by Orange Coast Analytical, a state-certified laboratory, in Tustin, California. The samples were maintained in

an ice-cooled chest and delivered to the laboratory within one working day of collection using chain-of-custody protocol.

Each groundwater sample and QA/QC sample was analyzed separately for volatile organic compounds (VOCs) using EPA Test Method 8260A in September and October 1998. Groundwater samples were also analyzed for dissolved iron, chloride, nitrate/nitrite, carbon dioxide (CO_2), ethane, and methane in October 1998 using the methods listed in Table 2. Analytes detected in the groundwater are summarized in Table 2. The laboratory reports and chain-of-custody records are included in Appendix B. For comparison, the analytical results from a previous sampling of the temporary monitoring wells in July 1998 are also included in Table 2.

3.4 Observations

- The groundwater level beneath the BRC C-6 facility decreased approximately 0.10 foot between September and October 1998. The gradient during both events was approximately 0.001 ft/ft to the south-southwest.

- VOCs were detected in groundwater samples from each well. Dichloroethene was detected above 100 micrograms per liter (µg/l) in 12 of the 18 wells sampled, with a maximum concentration of 41,000 µg/l in WCC-03S. Trichloroethene was detected above 100 µg/l in 17 of the 18 wells sampled, with a maximum concentration of 32,000 µg/l at TMW-02. 1,1,1-trichloroethane was detected above 100 µg/l in two wells, with a maximum concentration of 5,100 µg/l. Toluene and/or benzene was detected in six wells, with a maximum concentration of 68,000 µg/l in WCC-03S. The highest VOC concentrations were found in wells near the northeast corner of Building 1 and downgradient wells to the south and southwest. Significantly lower VOC concentrations were detected in upgradient and crossgradient wells. CO_2 was detected in each groundwater sample collected in October 1998, with concentrations ranging from 19 to 130 milligrams per liter (mg/l).

- Nitrate/nitrite was detected in each groundwater sample collected in October 1998, except in sample WCC-03S, with concentrations ranging from 1.1 to 14 mg/l.

- Chloride was detected in each groundwater sample collected in October 1998, with concentrations from 30 to 870 mg/l.

- Dissolved iron was detected in groundwater samples collected in October 1998 in monitoring wells TMW-01, TMW-07 through TMW-09, WCC-03S, and WCC-06S, with a maximum concentration of 28 mg/l.

- Ethane and methane were not detected in groundwater samples in October 1998.

- Dissolved oxygen (DO) measurements were recorded as each well was purged. Recorded DO levels varied between approximately 1.6 and 11.5 mg/l.

- Based on information regarding common industrial usage and the distribution and concentration of VOCs at the Site, the "parent" compounds are TCE, 1,1,1-TCA, and 1,1,2-TCA; the daughter compounds are 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCA, and 1,2-DCA (Kennedy/Jenks, 1998). The presence of these daughter compounds indicates that natural attenuation[1] through destructive abiotic and biotic degradation is occurring. Based on our experience at similar sites, it is our opinion that natural attenuation is also occurring due to the non-destructive processes of dispersion and sorption.

3.5 Quality Assurance/Quality Control Program

As part of the QA/QC protocol during the quarterly monitoring and sampling program, an equipment rinsate blank and duplicate sample were collected and submitted for chemical analysis during the September and October 1998 sampling events. A review of the QA/QC sample results indicated the following:

- VOCs were not detected in the equipment blanks.

- VOC concentrations reported for the duplicate samples from TMW-05 and WCC-03D in September 1998 were comparable to those of the original samples.

- VOC concentrations reported for the duplicate samples TMW-07 and WCC-03D in October 1998 were comparable to those of the original samples.

Groundwater monitoring and sampling procedures, including QA/QC procedures, are included in Appendix C.

[1] Natural attenuation is defined herein as the reduction in mass or concentration of a compound in groundwater due to naturally occurring processes. Destructive processes include abiotic and biotic degradation. Non-destructive processes include dispersion and sorption.

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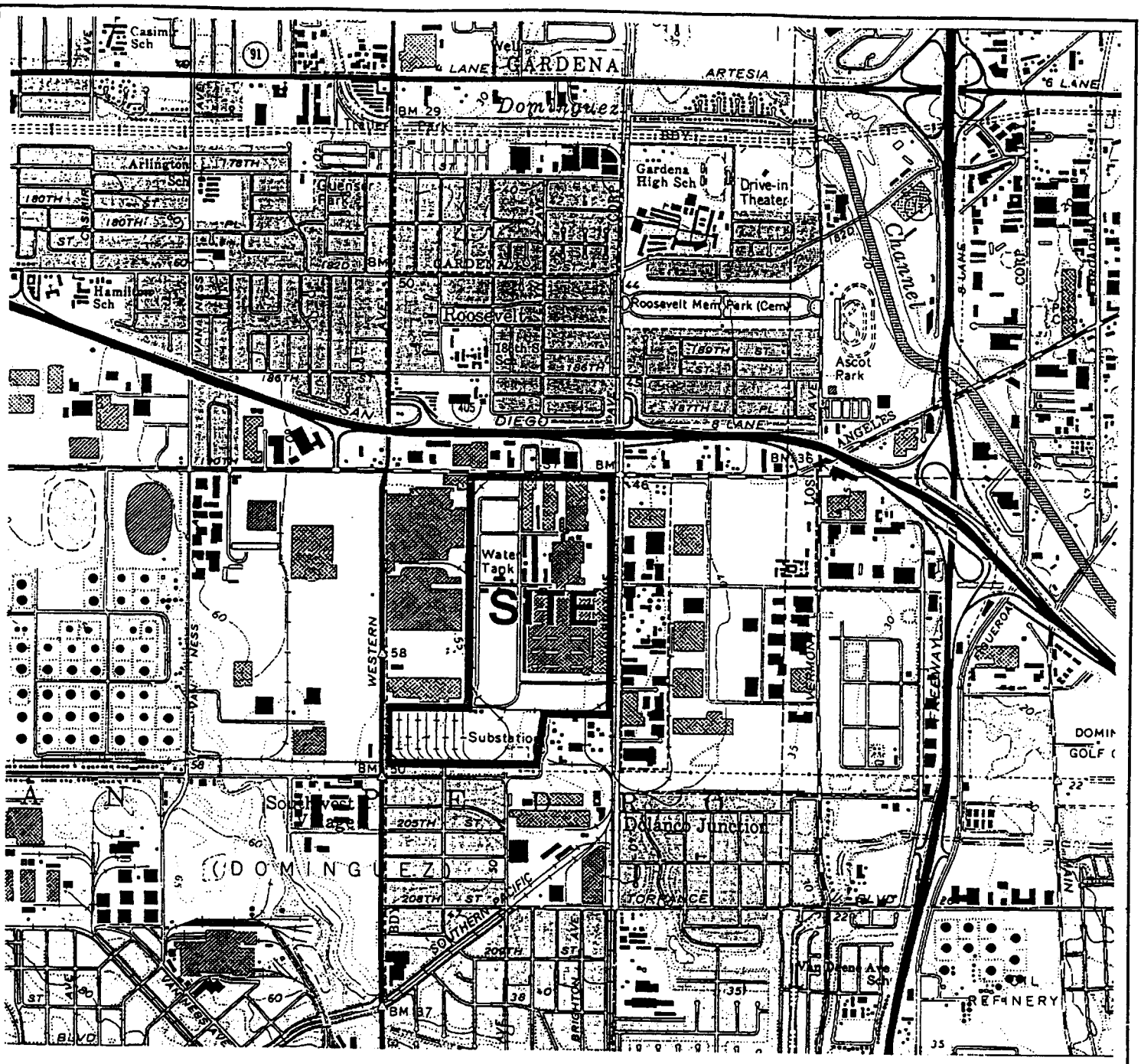
Poland, J. F., A.A. Garrett, and A. Sinnott. 1959. *Geology, hydrology, and chemical character of the ground waters in the Torrance-Santa Monica, California,* USGS Water Supply Paper 1461.

Woodward-Clyde Consultants. 1990. *Douglas Aircraft Company Torrance (C-6) Facility, Phase III groundwater and soil investigation report*, March 1990.

PLATES



SCALE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

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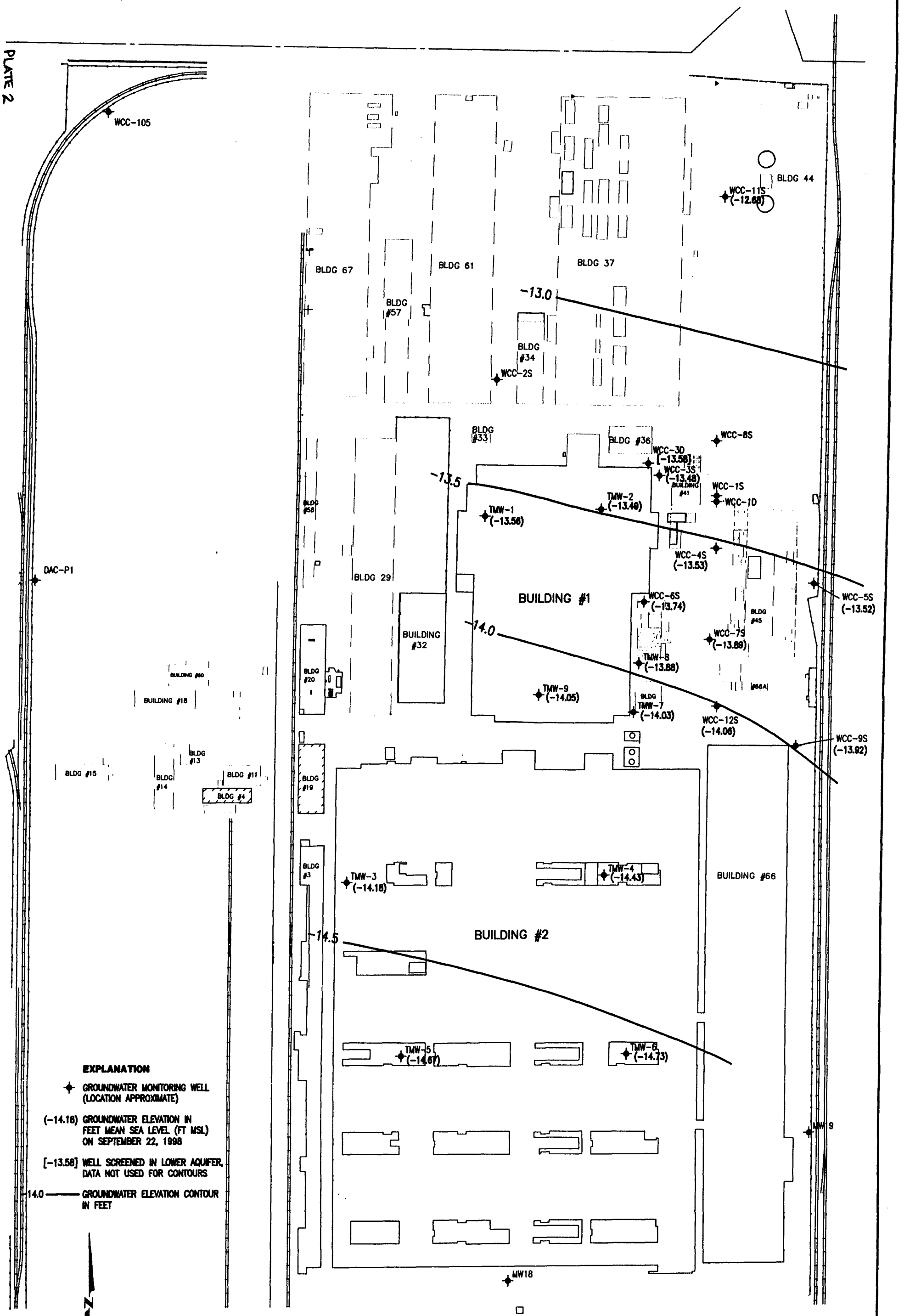
VICINITY MAP
Boeing Realty Corporation C-6 Facility
Los Angeles, California

PLATE
1

DRAWN	PROJECT-TASK NUMBER	APPROVED	DATE	REVISED DATE
JTL	40711-98.1		3/98	

PLATE 2



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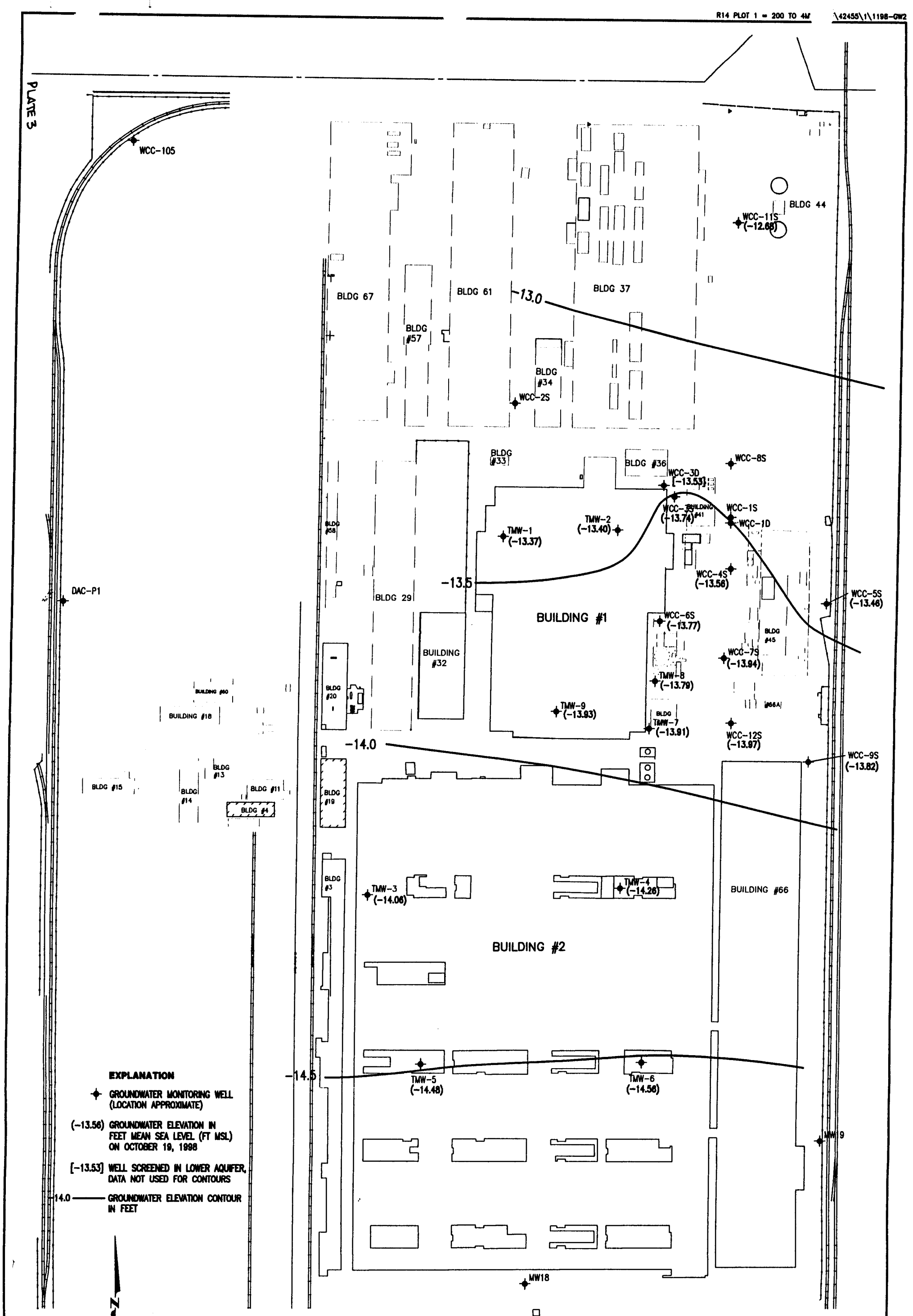
GROUNDWATER ELEVATIONS
SEPTEMBER 22, 1998
Boeing Realty Corporation C-6 Facility
Los Angeles, California

PLATE **2**

DRAWN	PROJECT-TASK NUMBER	APPROVED	DATE	REVISED DATE
JTL	42455-1		11/98	

PLATE 3



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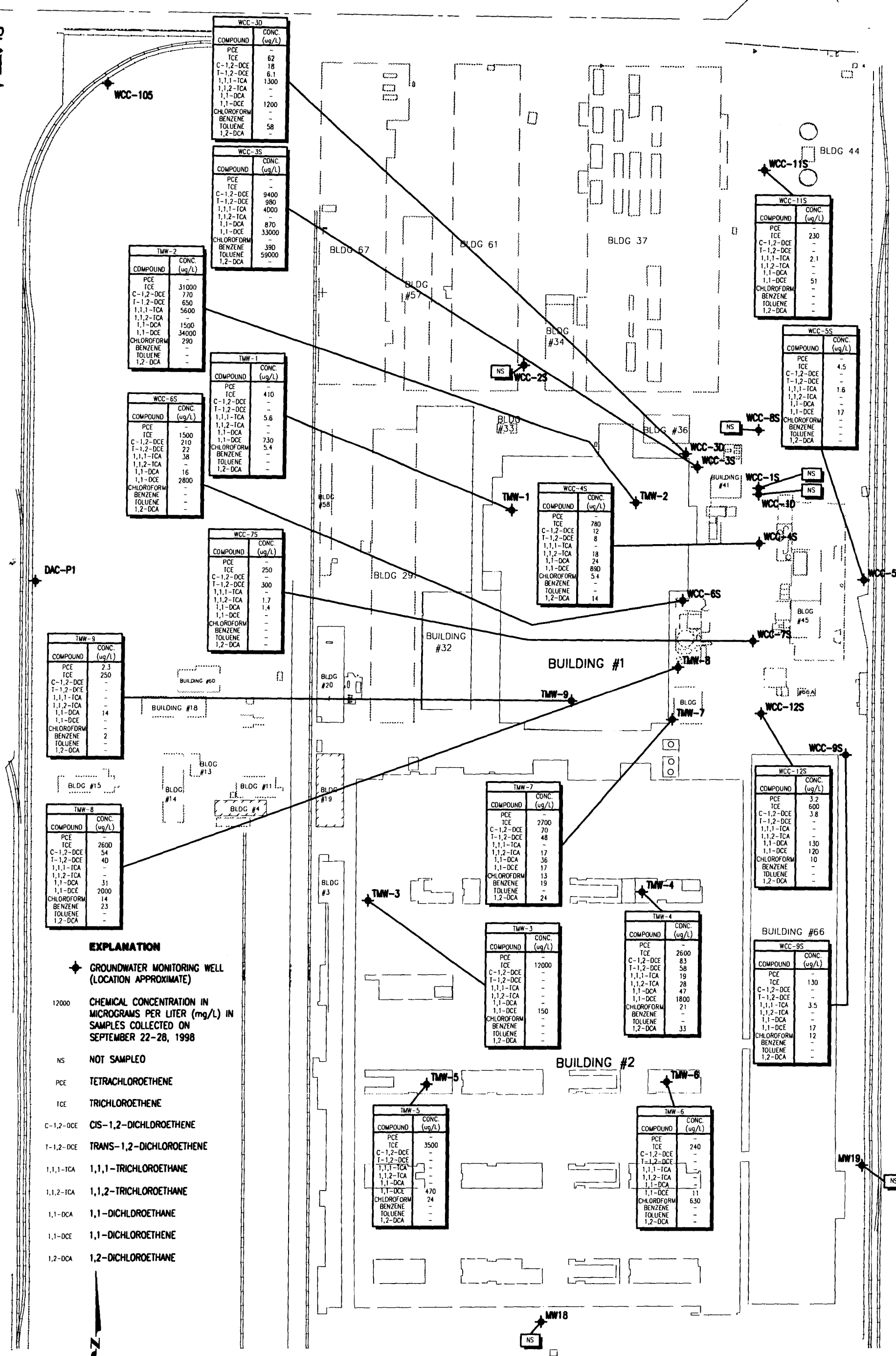
GROUNDWATER ELEVATIONS
OCTOBER 19, 1998
Boeing Realty Corporation C-6 Facility
Los Angeles, California

PLATE **3**

DRAWN	PROJECT-TASK NUMBER	APPROVED	DATE	REVISED DATE
JTL	42455-1		11/98	

PLATE 4



WCC-3D	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	62
C-1,2-DCE	18
T-1,2-DCE	6.1
1,1,1-TCA	1300
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	1200
CHLOROFORM	-
BENZENE	-
TOLUENE	58
1,2-DCA	-

WCC-3S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	-
C-1,2-DCE	9400
T-1,2-DCE	980
1,1,1-TCA	4000
1,1,2-TCA	-
1,1-DCA	870
1,1-DCE	33000
CHLOROFORM	-
BENZENE	390
TOLUENE	59000
1,2-DCA	-

TMW-2	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	31000
C-1,2-DCE	770
T-1,2-DCE	650
1,1,1-TCA	5600
1,1,2-TCA	-
1,1-DCA	1500
1,1-DCE	34000
CHLOROFORM	290
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-1	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	410
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	5.6
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	730
CHLOROFORM	5.4
BENZENE	-
TOLUENE	-
1,2-DCA	-

WCC-6S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	1500
C-1,2-DCE	210
T-1,2-DCE	22
1,1,1-TCA	38
1,1,2-TCA	-
1,1-DCA	16
1,1-DCE	2800
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

WCC-7S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	250
C-1,2-DCE	-
T-1,2-DCE	300
1,1,1-TCA	-
1,1,2-TCA	1.7
1,1-DCA	1.4
1,1-DCE	-
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-9	
COMPOUND	CONC. (ug/L)
PCE	2.3
TCE	250
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	14
1,1-DCE	-
CHLOROFORM	-
BENZENE	2
TOLUENE	-
1,2-DCA	-

TMW-8	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	2600
C-1,2-DCE	54
T-1,2-DCE	40
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	31
1,1-DCE	2000
CHLOROFORM	14
BENZENE	23
TOLUENE	-
1,2-DCA	-

WCC-4S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	780
C-1,2-DCE	12
T-1,2-DCE	8
1,1,1-TCA	-
1,1,2-TCA	18
1,1-DCA	24
1,1-DCE	890
CHLOROFORM	5.4
BENZENE	-
TOLUENE	-
1,2-DCA	14

WCC-11S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	230
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	2.1
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	51
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

WCC-5S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	4.5
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	1.6
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	17
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-7	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	2700
C-1,2-DCE	70
T-1,2-DCE	48
1,1,1-TCA	-
1,1,2-TCA	17
1,1-DCA	36
1,1-DCE	17
CHLOROFORM	13
BENZENE	19
TOLUENE	-
1,2-DCA	24

WCC-12S	
COMPOUND	CONC. (ug/L)
PCE	3.2
TCE	600
C-1,2-DCE	3.8
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	130
1,1-DCE	120
CHLOROFORM	10
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-3	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	12000
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	150
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-4	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	2600
C-1,2-DCE	83
T-1,2-DCE	58
1,1,1-TCA	19
1,1,2-TCA	28
1,1-DCA	47
1,1-DCE	1800
CHLOROFORM	21
BENZENE	-
TOLUENE	-
1,2-DCA	33

WCC-9S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	130
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	3.5
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	17
CHLOROFORM	12
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-5	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	3500
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	470
CHLOROFORM	24
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-6	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	240
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	11
CHLOROFORM	630
BENZENE	-
TOLUENE	-
1,2-DCA	-

EXPLANATION

- GROUNDWATER MONITORING WELL (LOCATION APPROXIMATE)
- 12000 — CHEMICAL CONCENTRATION IN MICROGRAMS PER LITER (mg/L) IN SAMPLES COLLECTED ON SEPTEMBER 22-28, 1998
- NS — NOT SAMPLED
- PCE — TETRACHLOROETHENE
- TCE — TRICHLOROETHENE
- C-1,2-DCE — CIS-1,2-DICHLOROETHENE
- T-1,2-DCE — TRANS-1,2-DICHLOROETHENE
- 1,1,1-TCA — 1,1,1-TRICHLOROETHANE
- 1,1,2-TCA — 1,1,2-TRICHLOROETHANE
- 1,1-DCA — 1,1-DICHLOROETHANE
- 1,1-DCE — 1,1-DICHLOROETHENE
- 1,2-DCA — 1,2-DICHLOROETHANE

HLA

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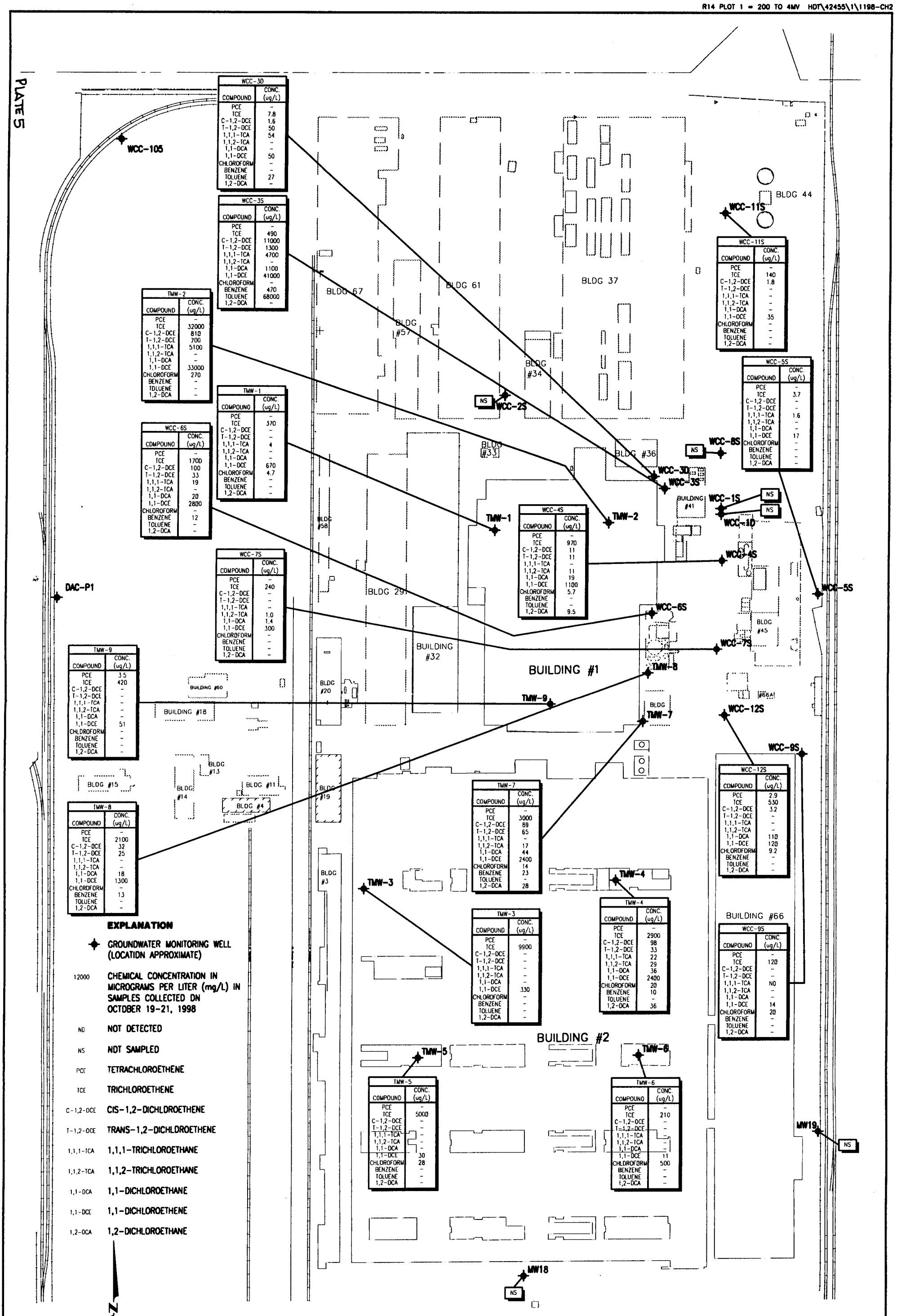
Engineering and Environmental Services

VOC CONCENTRATIONS IN GROUNDWATER
SEPTEMBER 22-28, 1998
Boeing Realty Corporation C-6 Facility
Los Angeles, California

PLATE **4**

DRAWN	PROJECT-TASK NUMBER	APPROVED	DATE	REVISED DATE
JTL	42455-1		12/98	

PLATE 5



WCC-3D	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	7.8
C-1,2-DCE	1.6
T-1,2-DCE	50
1,1,1-TCA	54
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	50
CHLOROFORM	-
BENZENE	-
TOLUENE	27
1,2-DCA	-

WCC-3S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	490
C-1,2-DCE	11000
T-1,2-DCE	1300
1,1,1-TCA	4700
1,1,2-TCA	-
1,1-DCA	1100
1,1-DCE	41000
CHLOROFORM	-
BENZENE	470
TOLUENE	68000
1,2-DCA	-

TMW-2	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	32000
C-1,2-DCE	810
T-1,2-DCE	700
1,1,1-TCA	5100
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	33000
CHLOROFORM	270
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-1	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	370
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	4
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	670
CHLOROFORM	4.7
BENZENE	-
TOLUENE	-
1,2-DCA	-

WCC-6S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	1700
C-1,2-DCE	100
T-1,2-DCE	33
1,1,1-TCA	19
1,1,2-TCA	-
1,1-DCA	20
1,1-DCE	2800
CHLOROFORM	-
BENZENE	12
TOLUENE	-
1,2-DCA	-

WCC-7S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	240
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	1.0
1,1-DCA	1.4
1,1-DCE	300
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

WCC-4S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	970
C-1,2-DCE	11
T-1,2-DCE	11
1,1,1-TCA	-
1,1,2-TCA	11
1,1-DCA	19
1,1-DCE	1100
CHLOROFORM	5.7
BENZENE	-
TOLUENE	-
1,2-DCA	9.5

WCC-11S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	140
C-1,2-DCE	1.8
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	35
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

WCC-5S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	3.7
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	1.6
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	17
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-9	
COMPOUND	CONC. (ug/L)
PCE	3.5
TCE	420
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	51
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-8	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	2100
C-1,2-DCE	32
T-1,2-DCE	25
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	18
1,1-DCE	1300
CHLOROFORM	-
BENZENE	13
TOLUENE	-
1,2-DCA	-

TMW-7	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	3000
C-1,2-DCE	89
T-1,2-DCE	65
1,1,1-TCA	-
1,1,2-TCA	17
1,1-DCA	44
1,1-DCE	2400
CHLOROFORM	14
BENZENE	23
TOLUENE	-
1,2-DCA	28

WCC-12S	
COMPOUND	CONC. (ug/L)
PCE	2.9
TCE	530
C-1,2-DCE	3.2
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	110
1,1-DCE	120
CHLOROFORM	9.2
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-3	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	9900
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	330
CHLOROFORM	-
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-4	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	2900
C-1,2-DCE	98
T-1,2-DCE	33
1,1,1-TCA	22
1,1,2-TCA	29
1,1-DCA	36
1,1-DCE	2400
CHLOROFORM	20
BENZENE	10
TOLUENE	-
1,2-DCA	36

WCC-9S	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	120
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	ND
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	14
CHLOROFORM	20
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-5	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	5000
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	30
CHLOROFORM	28
BENZENE	-
TOLUENE	-
1,2-DCA	-

TMW-6	
COMPOUND	CONC. (ug/L)
PCE	-
TCE	210
C-1,2-DCE	-
T-1,2-DCE	-
1,1,1-TCA	-
1,1,2-TCA	-
1,1-DCA	-
1,1-DCE	11
CHLOROFORM	500
BENZENE	-
TOLUENE	-
1,2-DCA	-

EXPLANATION

- ✦ GROUNDWATER MONITORING WELL (LOCATION APPROXIMATE)
- 12000 CHEMICAL CONCENTRATION IN MICROGRAMS PER LITER (mg/L) IN SAMPLES COLLECTED ON OCTOBER 19-21, 1998
- ND NOT DETECTED
- NS NOT SAMPLED
- PCE TETRACHLOROETHENE
- TCE TRICHLOROETHENE
- C-1,2-DCE CIS-1,2-DICHLOROETHENE
- T-1,2-DCE TRANS-1,2-DICHLOROETHENE
- 1,1,1-TCA 1,1,1-TRICHLOROETHANE
- 1,1,2-TCA 1,1,2-TRICHLOROETHANE
- 1,1-DCA 1,1-DICHLOROETHANE
- 1,1-DCE 1,1-DICHLOROETHENE
- 1,2-DCA 1,2-DICHLOROETHANE

Harding Lawson Associates
Engineering and Environmental Services

VOC CONCENTRATIONS IN GROUNDWATER
OCTOBER 19-21, 1998
Boeing Realty Corporation C-6 Facility
Los Angeles, California

PLATE **5**

DRAWN	PROJECT-TASK NUMBER	APPROVED	DATE	REVISED DATE
JTL	42455-1		12/98	

TABLES

TABLES

Table 1. Groundwater Level Monitoring Data

Well ID	Date	Top of Casing (ft MSL)	Depth to Groundwater (feet)	Groundwater Elevation (ft MSL)	Comments
TMW-01	07/15/98	52.41	65.82	-13.41	K/J
TMW-01	09/22/98	52.41	65.97	-13.56	
TMW-01	10/19/98	52.41	65.78	-13.37	
TMW-02	07/15/98	52.12	65.54	-13.42	K/J
TMW-02	09/23/98	52.12	65.61	-13.49	
TMW-02	10/20/98	52.12	65.52	-13.4	
TMW-03	07/15/98	51.9	66.07	-14.17	K/J
TMW-03	09/22/98	51.9	66.08	-14.18	
TMW-03	10/20/98	51.9	65.96	-14.06	
TMW-04	07/15/98	51.85	66.25	-14.4	K/J
TMW-04	09/22/98	51.85	66.28	-14.43	
TMW-04	10/20/98	51.85	66.11	-14.26	
TMW-05	07/15/98	51.32	65.94	-14.62	K/J
TMW-05	09/22/98	51.32	65.99	-14.67	
TMW-05	10/19/98	51.32	65.8	-14.48	
TMW-06	07/15/98	51.18	65.89	-14.71	K/J
TMW-06	09/22/98	51.18	65.91	-14.73	
TMW-06	10/19/98	51.18	65.74	-14.56	
TMW-07	07/15/98	52.25	66.23	-13.98	K/J
TMW-07	09/22/98	52.25	66.28	-14.03	
TMW-07	10/20/98	52.25	66.16	-13.91	
TMW-08	07/15/98	52.42	66.27	-13.85	K/J
TMW-08	09/22/98	52.42	66.3	-13.88	
TMW-08	10/20/98	52.42	66.21	-13.79	
TMW-09	07/15/98	52.46	66.54	-14.08	K/J
TMW-09	09/22/98	52.46	66.51	-14.05	
TMW-09	10/19/98	52.46	66.39	-13.93	
WCC-03D	09/28/98	51.18	64.76	-13.58	
WCC-03D	10/21/98	51.18	64.71	-13.53	
WCC-03S	07/15/98	51.12	64.52	-13.4	K/J
WCC-03S	09/23/98	51.12	64.6	-13.48	
WCC-03S	10/22/98	51.12	64.86	-13.74	

Table 1. Groundwater Level Monitoring Data

Well ID	Date	Top of Casing (ft MSL)	Depth to Groundwater (feet)	Groundwater Elevation (ft MSL)	Comments
WCC-04S	07/15/98	49.58	63.14	-13.56	K/J
WCC-04S	09/28/98	49.58	63.11	-13.53	
WCC-04S	10/21/98	49.58	63.14	-13.56	
WCC-05S	07/15/98	48.1	NA	-	K/J
WCC-05S	09/28/98	48.1	61.62	-13.52	
WCC-05S	10/21/98	48.1	61.56	-13.46	
WCC-06S	07/15/98	51.32	65.01	-13.69	K/J
WCC-06S	09/23/98	51.32	65.06	-13.74	
WCC-06S	10/22/98	51.32	65.09	-13.77	
WCC-07S	07/15/98	48.29	NA	-	K/J
WCC-07S	09/28/98	48.29	62.18	-13.89	
WCC-07S	10/21/98	48.29	62.23	-13.94	
WCC-09S	07/15/98	46.9	NA	-	K/J
WCC-09S	09/23/98	46.9	60.82	-13.92	
WCC-09S	10/21/98	46.9	60.72	-13.82	
WCC-11S	07/15/98	49.85	NA	-	K/J
WCC-11S	09/28/98	49.85	62.53	-12.68	
WCC-11S	10/21/98	49.85	62.53	-12.68	
WCC-12S	07/15/98	46.84	60.8	-13.96	K/J
WCC-12S	09/23/98	46.84	60.9	-14.06	
WCC-12S	10/21/98	46.84	60.81	-13.97	

Notes:
K/J = Kennedy/Jenks Consultants
MSL = mean sea level
NA = data not available

Table 2. Groundwater Analytical Data

Source	Date Sampled	ID / Comment	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	t-1,2-DCE	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	TFM	c-1,2-DCE
TMW-01	07/15/98	K/J		7.1			900				12		540		
TMW-01	09/22/98			5.4			730				5.6		410		
TMW-01	10/19/98			4.7			670				4		370	23	
TMW-02	07/15/98	K/J		350			36000	630			6900		34000		710
TMW-02	09/23/98			290	1500		34000	650			5600		31000		770
TMW-02	10/20/98			270	1600		33000	700			5100		32000		810
TMW-03	07/15/98	K/J					200						8100		
TMW-03	09/22/98						150						12000		
TMW-03	10/20/98						330						9900		
TMW-04	07/15/98	K/J			55	49	1500	66				43	2300		110
TMW-04	09/22/98			21	47	33	1800	58			19	28	2600		83
TMW-04	10/20/98		10	20	56	36	2400	73			22	29	2900		98
TMW-05	07/15/98	K/J					460						3700		
TMW-05	09/22/98			24			470						3500		
TMW-05	09/22/98	TMW-22 / Duplicate		18			340						2600		
TMW-05	10/19/98			28			530						5000		
TMW-06	07/15/98	K/J		550			26						490		3.4
TMW-06	09/22/98			630			11						240		
TMW-06	10/19/98			500			11						210		
TMW-07	07/15/98	K/J	40	26	73	60	3000	83			20	29	3500		120
TMW-07	09/22/98		19	13	36	24	1700	48				17	2700		70
TMW-07	10/20/98		23	14	44	28	2400	65				17	3000		89
TMW-07	10/20/98	TMW-60 / Duplicate	20	14	44	26	2100	57				17	2800		83
TMW-08	07/15/98	K/J	62	38	96	42	7000	120			37	37	5700		140
TMW-08	09/22/98		23	14	31		2000	40					2600		54
TMW-08	10/20/98		13		18		1300	25					2100		32

Table 2. Groundwater Analytical Data

Source	Date Sampled	ID / Comment	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	t-1,2-DCE	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	TFM	c-1,2-DCE
TMW-09	07/15/98	K/J		2.9			24		2.1				290		
TMW-09	09/22/98			2			14		2.3				250		
TMW-09	10/19/98						51		3.5				420		
WCC-03D	09/28/98						1200	6.1		58	1300		62		18
WCC-03D	09/28/98	Duplicate					1200	6.5		63	1300		63		18
WCC-03D	10/21/98						50			27	54		7.8		1.6
WCC-3D	10/21/98	WCC-61 / Duplicate					73			27	72		8.5		1.8
WCC-03S	09/23/98		390		870		33000	980		59000	4000				9400
WCC-03S	10/22/98		470		1100		41000	1300		68000	4700		490		11000
WCC-04S	09/28/98			5.4	24	14	890	8				18	780		12
WCC-04S	10/21/98			5.7	19	9.5	1100	11				11	970		11
WCC-05S	09/28/98						17				1.6		4.5		
WCC-05S	10/20/98						17						3.7		
WCC-06S	09/23/98				16		2800	22			38		1500		210
WCC-06S	10/22/98		12		20		2800	33			19		1700		100
WCC-07S	09/28/98				1.4		300					1.7	250		
WCC-07S	10/21/98				1.4		300					1.6	240		1
WCC-09S	09/23/98			12			17				3.5		130		
WCC-09S	10/21/98			20			14		0.71				120		
WCC-11S	09/28/98						51				2.1		230		
WCC-11S	10/21/98						35						140		1.8
WCC-12S	09/23/98			10	130		120		3.2				600		3.8
WCC-12S	10/21/98			9.2	110		120		2.9				530		3.2

Table 2. Groundwater Analytical Data

Source	Date Sampled	ID / Comment	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	t-1,2-DCE	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	TFM	c-1,2-DCE
Equip. Blank	09/22/98	MW-21													
Equip. Blank	09/28/98														
Equip. Blank	10/19/98	TMW-70													
Equip. Blank	10/21/98	TMW-71													
Trip Blank	09/23/98														
Trip Blank	09/28/98														
Trip Blank	10/16/98														
Trip Blank	10/16/98														
Trip Blank	10/16/98														

Notes:
All samples were analyzed by GC/MS (EPA 8260)
Chemical concentrations are reported in micrograms per liter (ug/l)
K/J = Previous sampling by Kennedy/Jenks Consultants on date indicated
Blank Cell = Compound not reported above minimum reporting level
1,1-DCA = 1,1-dichloroethane
1,2-DCA = 1,2-dichlorothane
1,1-DCE = 1,2-dichloroethene
t-1,2-DCE = trans-1,2-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
1,1,2-TCA = 1,1,2-trichloroethane
TCE= trichloroethene
PCE = tetrachloroethene
TFM = trichlorofluormethane
c-1,2-DCA = cis-1,2-dichloroethane

Table 2 (continued). Groundwater Analytical Data

				Dissolved Iron	Chloride	Nitrate/Nitrite	CO2	Ethane	Methane
			Method	6010A	325.3	353.3	NA	8015m	8015m
			Detection Limit	0.05	1	1	1	50	50
			MCL	0.3	250	10/1	NA	NA	NA
Sample ID	ID/Comment	Date Sampled	Unit	mg/l	mg/l	mg/l	mg/L	mg/l	mg/l
TMW-01		10/19/98		0.8	870	10	46		
TMW-02		10/20/98			550	1.9	130		
TMW-03		10/20/98			200	7.6	51		
TMW-04		10/20/98		0.088	350	1.8	77		
TMW-05		10/19/98			70	4.6	23		
TMW-06		10/19/98			370	5.2	63		
TMW-07		10/20/98		0.088	300	1.2	30		
TMW-07	TMW-60/Duplicate	10/20/98			300	1.1	49		
TMW-08		10/20/98		0.83	270	7.7	30		
TMW-09		10/19/98		0.18	240	3.1	53		
WCC-03D		10/21/98			90	0.76	21		
WCC-03S		10/22/98		28	790		79		
WCC-04S		10/21/98			330	1.9	28		
WCC-05S		10/21/98			40	14	49		
WCC-06S		10/22/98		1.2	420	1.9	19		
WCC-07S		10/21/98			610	2.1	19		
WCC-09S		10/21/98			180	5.5	41		
WCC-11S		10/21/98			30	1.7	51		
WCC-12S		10/21/98			300	6.4	28		

Notes:
Each sample was analyzed for all compounds listed
Blank Cell = compound not reported above minimum detection level
mg/l = milligram per liter
CO2 = carbon dioxide

APPENDIX A

BOE-C6-0043091

APPENDIX A

GROUNDWATER SAMPLING FORMS

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 40711
Recorded by: Mike E Palmer (Signature)

Well No.: TMW-1
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 9-22-98 Time: 1120
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 81.30
Water Level Depth (WL in feet BTOC): 65.97
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(81.30 - 65.97) x 2 ² x 4 x 0.0408 = 10.0 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1130 Start 1137 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	6.89	3.09	72.2	CLOUDY
4	6.98	3.11	71.6	"
6	6.91	3.11	71.7	"
8	6.94	3.10	71.7	"
10	6.90	3.11	71.6	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE TREATMENT

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-1	2/40ml	8260	HCL	ORANGE COAST	TIME 1145

QUALITY CONTROL SAMPLES

F.I.D. READS 3ppm

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 40711
Recorded by [signature] (Signature)

Well No. TMW-2
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 9-23-98 Time 0730
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.74
Water Level Depth (WL in feet BTOC): 65.61
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(80.74 - 65.61) X 2 ² X 4 X 0.0408 = 9.9 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0755 Start 0802 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (SIEMENS) ~~(µmhos/cm)~~	T ☐ °C ☒ °F	Other TURB
INITIAL	6.83	2.57	72.8	CLEAR
4	6.80	2.63	72.1	"
6	6.73	2.56	71.9	"
8	6.72	2.55	71.9	"
10	6.78	2.56	71.8	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-2	2/40ml	8260	HCL	ORANGE COAST	TIME = 0805

F.I.D. READS 160 ppm

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BORING
Job Number 40711
Recorded by [signature] (Signature)

Well No. TMW-3
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 9-22-98 Time 1330
Sampled by MEKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 82.90
Water Level Depth (WL in feet BTOC): 66.08
Number of Well Volumes to be purged (# Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(82.90 - 66.08) X 2 ^{2} X 4 X 0.0408 = 10.9 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1345 Start 1352 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

11.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☐ °C ~~°F~~	Other TCB
INITIAL	7.47	1.57	74.2	CLOUDY
4	7.23	1.51	73.3	"
7	7.02	1.44	72.7	"
9	6.99	1.42	72.6	"
11	6.98	1.41	72.6	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-3	2/40ml	8260	HCL	ORANGE COAST	TIME = 1355
				F.I.D. READS	74 ppm

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: TMW-4
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 9-22-98 Time: 1155
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 79.86
Water Level Depth (WL in feet BTOC): 66.28
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(79.86 - 66.28) X 2 ² X 4 X 0.0408 = 8.9 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1201 Start 1207 Stop 6 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

9.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SEISMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.14	1.51	72.4	CLDY
3	7.13	1.50	72.3	"
5	7.02	1.53	72.4	"
7	6.98	1.52	72.4	CLEAR
9	6.96	1.53	72.5	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-4	2/40ml	8260	HCL	ORANGE COAST	TIME = 1210
				F.I.D. READS 11ppm	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Well No. TMW-5

Well Type: ☒ Monitor ☐ Extraction ☐ Other

Well Material: ☒ PVC ☐ St. Steel ☐ Other

Date 9-22-95 Time 1225

Job Name BOEING

Job Number 40711

Recorded by (Signature)

Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC): 81.11

Water Level Depth (WL in feet BTOC): 65.99

Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(81.11 − 65.99) × 2² × 4 × 0.0408 = 9.9 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1235 Start 1242 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.39	.67	73.4	CLEAR
4	7.49	.66	72.8	"
6	7.44	.66	72.7	"
8	7.48	.67	72.6	"
10	7.50	.68	72.6	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-5	2/40ml	8260	HCL	~~[illegible]~~ ORANGE COAST	TIME = 1245
					F.I.D. READS 22 ppm
* DUPLICATE TAKEN					

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
TMW-5 AT 1250	TMW-22

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 40711
Recorded by [signature] (Signature)

Well No. TMW-6
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 9-22-98 Time 1040
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.58
Water Level Depth (WL in feet BTOC): 65.91
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(80.58 - 65.91) x 2² x 4 x 0.0408 = 9.6 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1050 Start 1057 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (Siemens)	T ☐ °C ☒ °F	Other TURB
INITIAL	6.78	1.60	72.1	CLOUDY
4	6.81	1.61	71.8	"
6	6.86	1.60	71.7	CLEAR
8	6.91	1.59	71.8	"
10	6.94	1.58	71.7	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-6	2/40ml	8260	HCL	ORANGE COAST	TIME=1105
				F.I.D. READ	0 ppm

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: TMW-7
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 9-22-98 Time: 1300
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 83.41
Water Level Depth (WL in feet BTOC): 66.28
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75 Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(83.41 − 66.28) × 2² × 4 × 0.0408 = 11.2 gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE TIME

1310 Start 1318 Stop 8 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

12.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.18	1.50	73.7	CLOUDY
3	7.13	1.49	73.4	"
6	7.08	1.48	73.4	CLEAR
9	7.07	1.49	73.4	"
12	7.04	1.47	73.4	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder: Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-7	2/40ml	8260	HCL	ORANGE COAST	TIME = 1320
					F.I.O.
					READ. 60ppm

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: TMW-8
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 9-22-98 Time: 1410
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 81.06
Water Level Depth (WL in feet BTOC): 66.30
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(81.06 - 66.30) X 2² X 4 X 0.0408 = 9.7 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1420 Start 1427 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SEIMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.39	1.26	73.6	CLOUDY
4	7.25	1.28	73.6	"
6	7.08	1.26	73.7	"
8	7.06	1.24	73.6	"
10	7.05	1.23	73.4	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-8	2/40ml	8260	HCL	ORANGE COAST	TIME = 1430
				F.I.D. READS 131 ppm	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: TMW-9
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 9-22-98 Time: 0945
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.47
Water Level Depth (WL in feet BTOC): 66.51
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(80.47 - 66.51) x 2² x 4 x 0.0408 = 9.1 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1000 Start 1007 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10. gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (Siemens)	T ☐ °C ☒ °F	Other TURB
FINE TEAL	8.17	.98	73.3	CLEAR
4	7.38	.99	73.6	"
6	7.24	.98	73.8	CLDY
8	7.18	.96	73.9	"
10	7.16	.95	74.0	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-9	2/40ml	8260	HCL	ORANGE COAST	TIME = 1015
				F.I.D. READ	0 ppm

* EQUIPMENT BLANK

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
EQUIPMENT	MW-21
AT	0700

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Well No. WCC-3D
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 9-28-98 Time 1011
Sampled by Ast (Initials)

Job Name Boeing
Job Number 40711
Recorded by [signature] (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 139.5
Water Level Depth (WL in feet BTOC): 64.76
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☑ Other 90'
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION

(139.5 − 64.76) × 4² × 4 × 0.0408 = 195.16 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1025 Start 1150 Stop Elapsed

PURGE RATE

Initial 3.0 gpm Final gpm

ACTUAL PURGE VOLUME

195 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other Turb	
initial	7.04	760.0	77.5	Clear	20
1039	6.71	677.0	76.0	"	40
1049	6.73	707.0	76.4	"	60
1102	6.78	684.0	77.6	"	80
1110	6.85	678.0	77.3	"	100

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other Turb	
1115	6.88	664.0	75.2	Clear	120
1126	6.96	657.0	71.1	"	140
1134	6.96	695.0	71.3	"	160
1150	6.96	640.0	69.2	"	195
Meter Nos.					

Observations During Purging (Well Condition, Turbidity, Color, Odor): no odors, clear

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other onsite Baker Tank

WELL SAMPLING

SAMPLING METHOD

☐ Same As Above
☑ Bailer - Type: Teflon Disposable
☑ Grab - Type: 8260
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
Well WCC-3D	2 40ml	8260	HCl	Orange Coast	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
Well WCC-3D	Duplicate

Blank Samples

Type	Sample No.
Trip	Trip
EQUIPMENT	Equipment

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 40711
Recorded by [signature] (Signature)

Well No. WCC-3S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 9-23-98 Time 1315
Sampled by (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 88.85
Water Level Depth (WL in feet BTOC): 64.60
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☒ Bailer Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☒ Near Top ☐ Other
Depth in feet (BTOC): 70' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(88.85 - 64.60) X 4 ^{2} X 4 X 0.0408 = 63.3 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1320 Start 1403 Stop 43 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

64 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SEIMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	6.74	3.32	76.3	CLEAR
30	6.26	2.57	74.0	"
40	5.88	2.35	74.1	"
50	5.79	2.32	73.9	"
64	5.80	2.33	73.8	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): HEAVY V.O.C. ODOR.
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-3S	2/40ml	8260	HCL	ORANGECOAST	TIME=1405

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: Boeing
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: WCC-4S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☐ PVC ☐ St. Steel ☐ Other
Date: 9-28-98 Time: 1630
Sampled by: [initials] (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.75
Water Level Depth (WL in feet BTOC): 63.11
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION

(89.75 − 63.11) × 4² × 4 × 0.0408 = 69.56 gallons

TD (feet) − WL (feet) × D (inches)² × # Vols × 0.0408 = Calculated Purge Volume

PURGE TIME

1635 Start 1703 Stop Elapsed

PURGE RATE

Initial 3.0 gpm Final gpm

ACTUAL PURGE VOLUME

70 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☒ °F	Other Turb	gal
initial	7.09	1745	73.1	clear	5
1641	6.75	1733	74.1	"	20
1645	6.70	1703	74.4	"	30
1649	6.70	1609	73.7	"	40
1654	6.69	1525	73.5	"	50

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☒ °F	Other Turb	gal
1658	6.69	1475	73.2	Clear	60
1703	6.71	1469	72.9	"	70
Meter Nos.					

Observations During Purging (Well Condition, Turbidity, Color, Odor): no odors clear
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other on site Baker Tanks

WELL SAMPLING

SAMPLING METHOD

☐ Same As Above
☒ Bailer - Type: Teflon disposable
☒ Grab - Type: 8260
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
Well WCC-4S	2(40ml)	8260	HCl	Orange Coast	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: Boeing
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: WCC-5S
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 9-28-98 Time: 1450
Sampled by: [initials] (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.25
Water Level Depth (WL in feet BTOC): 61.62
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION

(89.25 - 61.62) X 4 ^{2} X 4 X 0.0408 = 72.14 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1453 Start ~~3-0~~ 1523 Stop 30 Elapsed

PURGE RATE

Initial 3-0 gpm Final gpm

ACTUAL PURGE VOLUME

70 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ~~☐ °F~~	Other Turb	gal
initial	6.84	1495	74.0	Slty	5
1458	6.80	1467	74.7	"	10
1505	6.76	1460	74.3	clearing	20
1508	6.68	1438	74.0	"	30
1511	6.61	1428	73.5	"	40

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ~~☐ °F~~	Other Turb	gal
1515	6.58	1423	73.1	Clear	50
1519	6.58	1449	73.0	"	60
1523	6.62	1462	73.2	"	70
Meter Nos.					

Observations During Purging (Well Condition, Turbidity, Color, Odor): no odors, Slty Turbid
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other Onsite Baker Tanks.

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: Teflon Disposable
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☑ Grab - Type: 8260
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
Well WCC-5S	2 (40ml)	8260	HCl	Orange Coast	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 40711
Recorded by [signature] (Signature)

Well No. WCC-6S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 9-23-98 Time 1145
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 88.36
Water Level Depth (WL in feet BTOC): 65.06
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☒ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(88.36 - 65.06) X 4 ^{2} X 4 X 0.0408 = 60.1 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1150 Start 1230 Stop 40 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

60.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (Seimens)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.62	1.54	74.0	CLEAR
30	6.93	1.52	74.5	"
40	6.66	1.48	74.1	"
50	6.60	1.46	73.8	"
60	6.57	1.46	73.7	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): RUSTY - TINT TO WATER.
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK.

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-6S	2/40ml	8260	HCL	ORANGE COAST	TIME=1235

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: Boeing
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: WCC-7S
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 9-28-88 Time: 1552
Sampled by: [initials] (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 88.90
Water Level Depth (WL in feet BTOC): 62.18
Number of Well Volumes to be purged (# Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION

(88.90 TD (feet) - 62.18 WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 69.77 gallons Calculated Purge Volume

PURGE TIME

1553 Start 1622 Stop Elapsed

PURGE RATE

Initial 3.0 gpm Final gpm

ACTUAL PURGE VOLUME

70 gallons

FIELD PARAMETER MEASUREMENT

Sal

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☑ °F	Other Turb	
initial	6.79	1801	74.0	Turbid	5
1602	6.73	1776	74.4	Clearing	20
1606	6.69	1703	74.1	"	30
1610	6.71	1648	73.9	"	40
1614	6.69	1593	73.5	Clear	50

Sal

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☑ °F	Other Turb	
1618	6.75	1581	73.1	Clear	60
1622	6.75	1577	73.3	"	70
Meter Nos.					

Observations During Purging (Well Condition, Turbidity, Color, Odor): Silty Turbid, no odors.
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other Onsite Baker Tanks

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: Teflon Disposable
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☑ Grab - Type: 8260
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WellWCC-7S	2(40ml)	8260	HCl	Orange Coast	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BORING
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: WCC-9S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 9-23-98 Time: 0920
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.34
Water Level Depth (WL in feet BTOC): 60.82
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☒ Near Top ☐ Other
Depth in feet (BTOC): 70'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(89.34 - 60.82) X 4^2 X 4 X 0.0408 = 74.4 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0930 Start 1020 Stop 50 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

75.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.31	1.37	72.3	CLEAR
30	7.27	1.52	72.9	"
45	7.26	1.45	73.6	"
60	7.23	1.43	73.7	"
75	7.24	1.42	73.7	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-9S	2/40ml	8260	HCL	ORANGE COAST	TIME = 1025

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: Boeing
Job Number: 40711
Recorded by: [signature] (Signature)

Well No.: WCC-11S
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 9-28-98 Time: 1358
Sampled by: [initials] (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.5
Water Level Depth (WL in feet BTOC):
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION

$(89.5 - 62.53) \times 4^2 \times 4 \times 0.0408 = 70.42$ gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE TIME

1358 Start 1430 Stop Elapsed

PURGE RATE

Initial 2.3 gpm Final gpm

ACTUAL PURGE VOLUME

70 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☑ °F	Other Turb
initial	7.14	12,420.0	72.3	Clear
1405	6.74	11,900.0	72.4	"
1410	6.69	12,200.0	72.7	"
1414	6.66	12,140.0	73.1	"
1418	6.62	1290.0	73.2	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☑ °F	Other Turb	
1423	6.63	1197	72.6	~~1427~~	60
1430	6.64	1212	72.8	~~1430~~	70
				Clear	
Meter Nos.					

Observations During Purging (Well Condition, Turbidity, Color, Odor): no odors
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other On site Baker tank

WELL SAMPLING

SAMPLING METHOD

☐ Same As Above
☑ Bailer - Type: Teflon Disposable
☑ Grab - Type: 8260
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
Well WCC-11S	2 (40ml)	8260	HCl	Orange Coast	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 40711
Recorded by [signature] (Signature)

Well No. WCC - 12S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 9-23-98 Time 1035
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 90.23
Water Level Depth (WL in feet BTOC): 60.90
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☒ Near Top ☐ Other
Depth in feet (BTOC): 70' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(90.23 - 60.90) X 4 ^{2} X 4 X 0.0408 = 76.5 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1040 Start 1130 Stop 50 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

77 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (SEIMENS)	T ☐ °C ☒ °F	Other TURB
INITIAL	7.42	1.62	73.6	CLEAR
30	7.47	1.08	74.5	"
45	7.53	1.06	74.2	"
60	7.55	1.07	74.1	"
77	7.60	1.06	74.1	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON-SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-12S	2/40ml	8260	HCL	~~[illegible]~~ ORANGE COAST	TIME - ~~[illegible]~~ 1130

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BORING
Job Number: 42455-1
Recorded by: (Signature)

Well No.: TMW-1
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 10-19-98 Time: 1235
Sampled by: MARK PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 81.31
Water Level Depth (WL in feet BTOC): 65.78
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(81.31 − 65.78) x 2² x 4 X 0.0408 = 10.1 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1248 Start 1255 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other D.O.
INITIAL	7.36	3.11	22.7	13.52
4	7.23	4.43	22.3	9.26
6	7.19	3.33	22.2	7.17
8	7.17	3.38	22.2	6.91
10	7.16	3.36	22.1	6.22

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DEEP FOR VOC'S
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-1	6	VARIOUS	VARIOUS	ORANGE COAST	TIME 1255

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BORING
Job Number: 42455-1
Recorded by: [signature] (Signature)

Well No.: TMW-2
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 10-20-98 Time: 1130
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.76
Water Level Depth (WL in feet BTOC): 65.52
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☒ Near Top ☐ Other
Depth in feet (BTOC): 75'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(80.76 - 65.52) X 2 ^{2} X 4 X 0.0408 = 9.9 gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE TIME

1156 Start 1203 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~ SIEMENS)	T ☐ °C ☐ °F	Other D.O.
INITIAL	5.96	1.78	21.4	5.15
4	5.71	1.90	22.4	2.48
6	5.67	1.84	22.5	2.02
8	5.68	1.78	22.5	1.96
10	5.71	1.77	22.5	1.91

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISP FOR VOC'S
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-2	6	VARIOUS	VARIOUS	ORANGE COAST	TIME = 1210

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BORAN 6
Job Number: 42455-1
Recorded by: (Signature)

Well No.: TMW-3
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 10-20-98 Time: 1025
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC): 65.96
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WATER

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(82.93 - 65.96) x 2² x 4 x 0.0408 = 11.1 gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE TIME

1042 Start 1050 Stop 8 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

11 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (SIEMENS)	T ☒ °C ☐ °F	Other D.O.
INITIAL	6.28	1.13	22.4	11.40
4	6.16	1.13	22.3	11.15
6	6.14	1.09	22.4	11.14
8	6.11	1.05	22.4	11.51
11	6.09	1.06	22.4	11.44

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☐ Same As Above
☒ Bailer - Type: DISP. FOR VOC'S
☐ Grab - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-3	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=1055

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BORING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. TMW-4
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-20-98 Time 0900
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 79.86
Water Level Depth (WL in feet BTOC): 66.11
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(79.86 - 66.11) X 2² X 4 X 0.0408 = 9.0 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0923 Start 0929 Stop 6 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

9.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☒ °C ☐ °F	Other D.O.
INITIAL	6.34	1.17	21.1	12.19
4	6.13	1.12	22.3	11.50
6	6.10	1.12	22.4	10.90
8	6.09	1.12	22.4	10.07
9	6.06	1.12	22.4	10.04

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISP. VOC'S
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-4	6	VARIOUS	VARIOUS	ORANGE COAST	TIME = 0935

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. TMW-5
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-19-98 Time 1330
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 81.14
Water Level Depth (WL in feet BTOC): 65.80
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(81.14 - 65.80) x 2 ^{2} x 4 x 0.0408 = 9.4 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1412 Start 1419 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes Since~~ GALLONS Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☒ °C ☐ °F	Other D.O.
INITIAL	7.59	.109	22.7	7.01
4	7.49	1.07	22.5	6.59
6	7.36	1.06	22.9	6.22
8	7.30	1.06	22.5	6.71
10	7.28	1.06	22.4	6.42

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISP. (VOC'S)
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-5	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=1425

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature]

Well No. TMW-6
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-19-88 Time 1200
Sampled by MIKE PALMER

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.52
Water Level Depth (WL in feet BTOC): 65.74
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(80.52 - 65.74) x 2 ^{2} x 4 x 0.0408 = 9.6 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1214 Start 1221 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☒ °C ☐ °F	Other D.O.
INITIAL	7.42	1.77	22.5	7.16
4	7.32	1.73	22.1	8.91
6	7.31	1.71	22.0	8.72
8	7.30	1.71	21.8	8.36
10	7.27	1.71	21.7	8.31

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON SITE BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE (VOC'S)
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-6	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=1225

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. TMW-7
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-20-98 Time 0800
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 83.43
Water Level Depth (WL in feet BTOC): 66.16
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(83.43 - 66.16) X 2 ² X 4 X 0.0408 = 11.3 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0831 Start 0839 Stop 8 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

12 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (SEIMENS)	T ☒ °C ☐ °F	Other D.O.
INITIAL	5.74	1.10	21.6	8.20
6	6.02	1.08	22.5	7.04
8	6.15	1.07	22.6	7.01
10	6.17	1.07	22.7	6.78
12	6.21	1.07	22.7	6.60

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISP. FOR VOC'S
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-7	6	VARIOUS	VARIOUS	ORANGE CONST	TIME = 0845
* DUPLICATE TAKEN *					

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
TMW-7	TMW-60 AT. 0850
TEST FOR	ALL CONSTITUENTS REQUESTED

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. TMW-8
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-20-98 Time 0945
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 81.06
Water Level Depth (WL in feet BTOC): 66.21
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(81.06 - 66.21) X 2 ^{2} X 4 X 0.0408 = 9.7 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0955 Start 1002 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (SEIMENS)	T ☒ °C ☐ °F	Other D.O
INITIAL	5.95	.93	22.7	7.05
4	5.89	.94	22.8	5.02
6	5.86	.93	22.8	2.22
8	5.86	.94	22.8	1.96
10				

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISP. FOR VOC's
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-8	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=1010

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature]

Well No. TMW-9
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-19-98 Time 1100
Sampled by MIKE PALMER (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.56
Water Level Depth (WL in feet BTOC): 66.39
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: WHALE

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top, ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

$(80.56 - 66.39) \times 2^2 \times 4 \times 0.0408 = 9.3$ gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE TIME

1121 Start 1128 Stop 7 Elapsed

PURGE RATE

Initial 1.5 gpm Final 1.5 gpm

ACTUAL PURGE VOLUME

10 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes~~ GALLONS Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (Siemens)	T ☒ °C ☐ °F	Other D.O.
INITIAL	8.52	1.36	22.4	5.31
4	8.47	1.22	22.5	5.12
6	7.94	1.17	22.4	5.30
8	7.86	1.19	22.7	6.10
10	7.81	1.18	22.8	6.39

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other ON SITE STORAGE

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE (VOC'S)
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
TMW-9	VARIOUS	VARIOUS	VARIOUS	ORANGE COAST	TIME = 1135

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
EQUIPMENT	TMW-70
AT	1030.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. WCC-3D
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-21-98 Time 1340
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 139.48
Water Level Depth (WL in feet BTOC): 64.71
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 100' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(139.48 - 64.71) x 4 ^{2} x 4 X 0.0408 = 195.2 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1410 Start 1449 Stop 39 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

195 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (Siemens)	T ☒ °C ☐ °F	Other D.O
INITIAL	6.46	1.02	24.5	12.19
10	6.43	.722	23.6	1.90
20	6.55	.720	23.4	2.61
30	6.53	.711	23.3	1.72
35	6.58	.712	23.3	1.68

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other D.O
39	6.60	.711	23.4	1.62
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-3D	6	VARIOUS	VARIOUS	ORANGE COAST	TIME = 1500

* DUPLICATE TAKEN

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
WCC-3D	WCC-61
	AT 1505
	*8260 ONLY.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. WCC-3S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-22-98 Time 0710
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 88.87
Water Level Depth (WL in feet BTOC): 64.86
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(88.87 - 64.86) x 4 ^{2} x 4 X 0.0408 = 62.6 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0728 Start 0741 Stop 13 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

63 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (Siemens) ~~(µmhos/cm)~~	T ☒ °C ☐ °F	Other D.O.
INITIAL	5.50	2.26	21.9	4.01
4	5.59	2.03	23.3	1.81
8	5.63	1.92	23.4	1.74
10	5.67	1.69	23.4	1.82
13	5.64	1.68	23.5	1.77

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): STRONG. H.C. ODOR.
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-3S	6	VARIOUS	VARIOUS	ORANGE COAST	TIME = 0850

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name 42455-1 BOEING
Job Number
Recorded by [signature] (Signature)

Well No. WCC-4S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-21-98 Time 1245
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.66
Water Level Depth (WL in feet BTOC): 63.14
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(89.66 - 63.14) X 4 ^{2} X 4 X 0.0408 = 66.6 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1301 Start 1315 Stop 14 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

67 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (Siemens)	T ☒ °C ☐ °F	Other D.O.
INITIAL	6.28	.95	24.8	10.53
5	6.14	1.24	23.6	7.06
8	6.17	1.24	23.6	6.96
11	6.21	1.17	23.5	6.84
14	6.16	1.13	23.6	6.39

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK.

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-4S	6	VARIOUS	VARIOUS	ORANGE COAST	TIME = 1325

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. WCC-5S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-20-98 Time 1315
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.33
Water Level Depth (WL in feet BTOC): 61.56
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(89.33 - 61.56) X 4 ^{2} X 4 X 0.0408 = 72.5 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1346 Start 1401 Stop 15 Elapsed

PURGE RATE

Initial 5.0 gpm Final 5.0 gpm

ACTUAL PURGE VOLUME

73.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (Siemens) ~~(µmhos/cm)~~	T ☒ °C ☐ °F	Other D.O.
INITIAL	6.50	1.00	23.6	14.09
5	6.12	1.06	23.3	11.69
8	6.10	1.05	23.3	11.02
11	6.06	1.05	23.3	10.73
15	6.07	1.07	23.2	11.07

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-5S	6	VARIOUS	VARIOUS	ORANGECOAST	1410

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 424555-1
Recorded by: [signature] (Signature)

Well No.: WCC-6S
Well Type: ☐ Monitor ☐ Extraction ☐ Other
Well Material: ☐ PVC ☐ St. Steel ☐ Other
Date: 10-22-98 Time: 0620
Sampled by: MARK PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 88.38
Water Level Depth (WL in feet BTOC): 65.09
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(88.38 - 65.09) x 4² x 4 x 0.0408 = 60.8 gallons

TD (feet) - WL (feet) x D (inches)² x # Vols x 0.0408 = Calculated Purge Volume

PURGE TIME

0636 Start 0648 Stop 12 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

60 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (SIEMENS)	T ☒ °C ☐ °F	Other D.O.
~~INITIAL~~	6.18	1.09	20.4	7.53
4	6.04	1.10	23.0	2.30
8	6.04	1.08	23.1	2.06
10	6.01	1.06	23.1	2.11
12	5.97	1.05	23.1	2.06

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): STRONG ODOR FIRST 30 GAL.

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-6S	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=0655

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. WCC-7S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-21-98 Time 0845
Sampled by MIKE PALMITER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 88.91
Water Level Depth (WL in feet BTOC): 62.23
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(88.91 TD (feet) - 62.23 WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 69.6 gallons Calculated Purge Volume

PURGE TIME

0907 Start 0921 Stop 14 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

70. gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~) (SEIMENS)	T ☒ °C ☐ °F	Other D.O.
INITIAL	6.35	1.20	20.1	12.83
4	6.24	1.29	23.0	11.35
8	6.28	1.20	23.2	10.81
11	6.26	1.17	23.2	10.13
14	6.24	1.13	23.2	9.85

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-7S	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=0930

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BORING
Job Number 42455-1
Recorded by (Signature)

Well No. WCC-9S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-21-98 Time 0700
Sampled by MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.33
Water Level Depth (WL in feet BTOC): 60.72
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(89.33 - 60.72) x 4 ^{2} x 4 X 0.0408 = 74.7 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0745 Start 0800 Stop 15 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

75.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (~~µmhos/cm~~ SIEMENS)	T ~~☐ °C~~ ☐ °F	Other D.O.
INITIAL	6.45	1.13	21.9	13.88
5	6.06	1.09	22.9	12.19
8	6.08	1.04	22.9	10.81
11	6.10	1.01	22.9	10.38
15	6.11	.98	22.9	9.21

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-9S	6	VARIOUS	VARIOUS	ORANGE COAST	TIME = 0810
	* EQUIPMENT BLANK TAKEN				

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
EQUIPMENT BLANK	TMW-71 AT 0630

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 42455-1
Recorded by [signature] (Signature)

Well No. WCC-11S
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-21-98 Time 1015
Sampled by MIKE PARMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 89.44
Water Level Depth (WL in feet BTOC): 62.53
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75' Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(89.44 TD (feet) - 62.53 WL (feet)) x 4 D (inches)^2 x 4 # Vols x 0.0408 = 70.4 gallons Calculated Purge Volume

PURGE TIME

1053 Start 1107 Stop 14 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

70. gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ SIEMENS	T ☐ °C ☐ °F	Other D.O.
INITIAL	6.33	1.33	22.0	8.55
4	6.24	1.32	22.1	7.54
8	6.22	1.34	22.2	8.02
11	6.30	1.26	22.2	7.69
14	6.24	1.21	22.2	7.50

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-11S	6	VARIOUS	VARIOUS	ORANGE COAST	TIME=1115

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 42455-1
Recorded by: [signature] (Signature)

Well No.: WCC-125
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 10-21-98 Time: 1130
Sampled by: MIKE PALMER (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 90.34
Water Level Depth (WL in feet BTOC): 60.81
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 75'
Screen Interval in Feet (BTOC) from ____ to ____

PURGE VOLUME CALCULATION:

(90.34 − 60.81) × 4² × 4 × 0.0408 = 77.1 gallons

TD (feet) − WL (feet) × D (inches)² × # Vols × 0.0408 = Calculated Purge Volume

PURGE TIME

1145 Start 1201 Stop 16 Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

77.0 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. ~~(µmhos/cm)~~ (Siemens)	T ☒ °C ☐ °F	Other D.O.
INITIAL	6.36	.99	23.7	12.20
6	6.35	1.25	23.8	8.41
10	6.31	1.19	23.7	8.44
13	6.32	1.17	23.8	7.89
16	6.30	1.16	23.8	8.35

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other ____
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
WCC-125	6	VARIOUS	VARIOUS	ORANGE COAST.	TIME=1210

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

HLA
ding Lawson Associates
.. Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 40711

Name/Location: BOEING

Project Manager: JIM VAN DER WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-8260
23	X							2				98	09	22	0700	MW-21							X
23	X							2				98	09	22	1015	TMW-9							X
23	X							2				98	09	22	1105	TMW-6							X
23	X							2				98	09	22	1145	TMW-1							X
23	X							2				98	09	22	1210	TMW-4							X
23	X							2				98	09	22	1245	TMW-5							X
23	X							2				98	09	22	1250	TMW-22							X
23	X							2				98	09	22	1320	TMW-7							X
23	X							2				98	09	22	1355	TMW-3							X
23	X							2				98	09	22	1430	TMW-8							X

ANALYSIS REQUESTED

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 9-23-98 1648		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) M. Van Kouwen 9-23-98	DATE/TIME 16:19

METHOD OF SHIPMENT

6533

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

BOE-C6-0043129

H g Lawson Associates
30 Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 410711

Name/Location: BOEING

Project Manager: JIM VAN DER WATER

Recorder: (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL		SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA 8260
23	X							2					98	09	23	0805	TMW-2			X				
23	X							2					98	09	23	1025	WCC-9S			X				
23	X							2					98	09	23	1130	WCC-12S			X				
23	X							2					98	09	23	1235	WCC-6S			X				
23	X							2					98	09	23	1405	WCC-3S			X				
	X							2					98	09			TRIP BLANK			X				

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) 9-23-98 1648	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

6533

BOE-C6-0043130

Harding Lawson Associates
30 Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: Orange coast

Samplers: JWH

Job Number: 40711

Name/Location: Boeing / Torrance

Project Manager: Jim Van Der Water

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	SAMPLE NUMBER OR LAB NUMBER: Yr Wk Seq	DATE: Yr Mo Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA 8260
10	Y							2		9 8 0 9 2 8	--	Trip Blank							Y
10	X							2			1010	Equipment Blank							X
22	X							2			0900	Duplicate							X
22	Y							2			1155	WCC-3D							Y
22	Y							2			1708	WCC-4S							X
22	X							2			1525	WCC-5S							X
22	Y							2			1625	WCC-7S							Y
22	X							2			1430	WCC-11S							X

LAB NUMBER: Yr Wk Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
				Hold Duplicate
				and equipment
				Blank Call
				Nick Hagen for
				additional information
				260-15W
				Normal TAT

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 9-29-98 0815		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
	[signature]	9-29-98 8:12
METHOD OF SHIPMENT		

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6533

BOE-C6-0043131

HLA
Harding Lawson Associates
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Irvine, CA 92714
(714) 260-1800

PAGE 1 OF 2

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PACHIER

Job Number: 42455-1

Name/Location: BOATYARD

Project Manager: JIM VAN DE WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-8260	6010A - DISS. IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO_2	8015M ETHANOL/METHANOL
23	X				2		1	3				98	10	19	1135	TMW-9							X	X	X	X	X	X
23	X				2		1	3				98	10	19	1255	TMW-1							X	X	X	X	X	X
23	X				2		1	3				98	10	19	1225	TMW-6							X	X	X	X	X	X
23	X				2		1	3				98	10	19	1425	TMW-5							X	X	X	X	X	X
23	X							3				98	10	19	1030	TMW-70							X					
23	X							1				98	10	16	—	TRIP BLANK							X					
23	X				2		1	3				98	10	20	0845	TMW-7							X	X	X	X	X	X
23	X				2		1	3				98	10	20	0850	TMW-60							X	X	X	X	X	X
23	X				2		1	3				98	10	20	0935	TMW-4							X	X	X	X	X	X
23	X											98	10	20	1010	TMW-8							X	X	X	X	X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.
						OLYMPIANS ? CALL
						NTCH HAGEN

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
[signature]	10-21-98 0530	[signature]	10/21 0530
[signature]			

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) [signature] DATE/TIME 10-21-98 8:40am

METHOD OF SHIPMENT

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CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 30483-40

Name/Location: BOEING

Project Manager: JIM VAN DE WATER

Recorder: (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr Wk Seq	DATE: Yr Mo Dy Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA 8270 FOR PARACHLOROBENZENE SULFONIC ACID ONLY!
23	X				1				981019 1135	TMW-9							X
23	X				1				981019 1225	TMW-6							X
23	X				1				981019 1255	TMW-1							X
23	X				1				981019 1425	TMW-5							X
23	X				1				981020 0845	TMW-7							X
23	X				1				981020 0935	TMW-4							X
23	X				1				981020 1010	TMW-8							X
23	X				1				981020 1055	TMW-3							X
23	X				1				981020 1210	TMW-2							X

LAB NUMBER: Yr Wk Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
				NORMAL T.A.T.
				*PRIVILEGED LEGAL
				INFORMATION.
				BILL H.L.A. UNDER
				JOB# LISTED ABOVE.
				CALL NICK HAGEN (HLA)
				IF ANY QUESTIONS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
10-20-98 1633			
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) DATE/TIME 10-20-98 16:33

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PAGE 1 OF 2

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE JALMER

Job Number: 42455-1

Name/Location: BOEING

Project Manager: JIM VAN DE WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA 8260	6010A - DIS. TRUN	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO_2	8015M - ETHANE/METHANE
23	X				2		1	3				98	10	20	1055	TMW-3							X	X	X	X	X	X
23	X				2		1	3				98	10	20	1210	TMW-2							X	X	X	X	X	X
23	X				2		1	3				98	10	20	1410	WCC-5S							X	X	X	X	X	X
23	X							1				98	10	16		TRIP BLANK							X					

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.
						QUESTIONS? CALL
						NICK HAGEN

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 10-21-98 0530	[signature]	10/21 [illegible]
[signature]		

DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		[signature] 10-[illegible]	8:40am

METHOD OF SHIPMENT

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CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 42455-1

Name/Location: BOEING

Project Manager: TEM VAN DE WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-8260	6010A - DES. IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO_2	8015M - ETHANE/METHANE
23	X				2		1	3				98	10	21	1500	WCC-3D							X	X	X	X	X	X
23	X				2		1	3				98	10	21	0810	WCC-9S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	1325	WCC-4S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	1210	WCC-12S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	1115	WCC-11S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	0930	WCC-7S							X	X	X	X	X	X
23	X							3				98	10	21	1505	WCC-61							X					
23	X							3				98	10	21	0630	TMW-71							X					
23	X							1				98	10	16	—	TRIP BLANK							X					
23	X				2		1	3				98	10	22	0655	WCC-6S							X	X	X	X	X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.
						QUESTIONS? CALL
						NICK HAGEN

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 10-22-98 1036		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) [signature] 10-22-98	DATE/TIME 10:36

METHOD OF SHIPMENT

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Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: [illegible]

Job Number: 42455.1

Name/Location: BOEING

Project Manager: [illegible]

Recorder: [illegible] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-3260	6010A - DIS. IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO2	8015 - ETHANE/METHANE
23	X				2		1	3				98	10	22	0750	WCC-3S							X	X	X	X	X	X

ANALYSIS REQUESTED

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[illegible] 10-27-98 1036		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) [illegible] 10-28-98	DATE/TIME 10:36

METHOD OF SHIPMENT

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APPENDIX B

LABORATORY DATA SHEETS

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, MW-21
Laboratory Sample Number: 98090159
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, MW-21
Laboratory Sample Number: 98090159
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	92
Toluene-d8	94
4-Bromofluorobenzene	93

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-9
Laboratory Sample Number: 98090160
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	1.0	N.D.
Bromodichloromethane	75-27-4	1.0	N.D.
Bromoform	75-25-2	1.0	N.D.
Bromomethane	74-83-9	2.0	N.D.
Carbon Disulfide	75-15-0	1.0	N.D.
Carbon tetrachloride	56-23-5	1.0	N.D.
Chlorobenzene	108-90-7	1.0	N.D.
Chlorodibromomethane	124-48-1	1.0	N.D.
Chloroethane	75-00-3	1.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	1.0	N.D.
Chloroform	67-66-3	1.0	2.0
Chloromethane	74-87-3	1.0	N.D.
1,1-Dichloroethane	75-34-3	1.0	N.D.
1,2-Dichloroethane	107-06-2	1.0	N.D.
1,1-Dichloroethene	75-35-4	1.0	14
Trans 1,2-Dichloroethene	156-60-5	1.0	N.D.
1,2-Dichloropropane	78-87-5	1.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	1.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	1.0	N.D.
Ethylbenzene	100-41-4	1.0	N.D.
Methylene chloride	75-09-2	5.0	N.D.
Styrene	100-42-5	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
Tetrachloroethene	127-18-4	1.0	2.3
Toluene	108-88-3	1.0	N.D.
1,1,1-Trichloroethane	71-55-6	1.0	N.D.
1,1,2-Trichloroethane	79-00-5	1.0	N.D.
Trichloroethene	79-01-6	1.0	250
Trichlorofluoromethane	75-69-4	1.0	N.D.
Vinyl acetate	108-05-4	2.0	N.D.
Vinyl chloride	75-01-4	1.0	N.D.
Total Xylenes	1330-20-7	2.0	N.D.
Dichlorodifluoromethane	75-71-8	1.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	1.0	N.D.
2,2-Dichloropropane	594-20-7	1.0	N.D.
Bromochloromethane	74-97-5	1.0	N.D.
1,1-Dichloropropene	563-58-6	1.0	N.D.
Dibromomethane	74-95-3	1.0	N.D.
1,2-Dibromoethane	106-93-4	1.0	N.D.

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3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-9
Laboratory Sample Number: 98090160
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	1.0	N.D.
Isopropylbenzene	98-82-8	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
1,2,3-Trichloropropane	96-18-4	1.0	N.D.
Bromobenzene	108-86-1	1.0	N.D.
n-Propylbenzene	103-65-1	1.0	N.D.
2-Chlorotoluene	95-49-8	1.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	1.0	N.D.
4-Chlorotoluene	106-43-4	1.0	N.D.
tert-Butylbenzene	98-06-6	1.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	1.0	N.D.
sec-Butylbenzene	135-98-8	1.0	N.D.
4-Isopropyltoluene	99-87-6	1.0	N.D.
1,3-Dichlorobenzene	541-73-1	1.0	N.D.
1,4-Dichlorobenzene	106-46-7	1.0	N.D.
n-Butylbenzene	104-51-8	1.0	N.D.
1,2-Dichlorobenzene	95-50-1	1.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	1.0	N.D.
Hexachlorobutadiene	87-68-3	1.0	N.D.
Naphthalene	91-20-3	1.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	88
Toluene-d8	95
4-Bromofluorobenzene	93

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-6
Laboratory Sample Number: 98090161
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	630
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	N.D.
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	11
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	N.D.
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	240
Trichlorofluoromethane	75-69-4	2.5	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	N.D.
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-6
Laboratory Sample Number: 98090161
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	107
Toluene-d8	91
4-Bromofluorobenzene	96

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-1
Laboratory Sample Number: 98090162
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	5.0	N.D.
Bromodichloromethane	75-27-4	5.0	N.D.
Bromoform	75-25-2	5.0	N.D.
Bromomethane	74-83-9	10	N.D.
Carbon Disulfide	75-15-0	5.0	N.D.
Carbon tetrachloride	56-23-5	5.0	N.D.
Chlorobenzene	108-90-7	5.0	N.D.
Chlorodibromomethane	124-48-1	5.0	N.D.
Chloroethane	75-00-3	5.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	5.0	N.D.
Chloroform	67-66-3	5.0	5.4
Chloromethane	74-87-3	5.0	N.D.
1,1-Dichloroethane	75-34-3	5.0	N.D.
1,2-Dichloroethane	107-06-2	5.0	N.D.
1,1-Dichloroethene	75-35-4	5.0	730
Trans 1,2-Dichloroethene	156-60-5	5.0	N.D.
1,2-Dichloropropane	78-87-5	5.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	5.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	5.0	N.D.
Ethylbenzene	100-41-4	5.0	N.D.
Methylene chloride	75-09-2	25	N.D.
Styrene	100-42-5	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
Tetrachloroethene	127-18-4	5.0	N.D.
Toluene	108-88-3	5.0	N.D.
1,1,1-Trichloroethane	71-55-6	5.0	5.6
1,1,2-Trichloroethane	79-00-5	5.0	N.D.
Trichloroethene	79-01-6	5.0	410
Trichlorofluoromethane	75-69-4	5.0	N.D.
Vinyl acetate	108-05-4	10	N.D.
Vinyl chloride	75-01-4	5.0	N.D.
Total Xylenes	1330-20-7	10	N.D.
Dichlorodifluoromethane	75-71-8	5.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	5.0	N.D.
2,2-Dichloropropane	594-20-7	5.0	N.D.
Bromochloromethane	74-97-5	5.0	N.D.
1,1-Dichloropropene	563-58-6	5.0	N.D.
Dibromomethane	74-95-3	5.0	N.D.
1,2-Dibromoethane	106-93-4	5.0	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-1
Laboratory Sample Number: 98090162
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	5.0	N.D.
Isopropylbenzene	98-82-8	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
1,2,3-Trichloropropane	96-18-4	5.0	N.D.
Bromobenzene	108-86-1	5.0	N.D.
n-Propylbenzene	103-65-1	5.0	N.D.
2-Chlorotoluene	95-49-8	5.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	5.0	N.D.
4-Chlorotoluene	106-43-4	5.0	N.D.
tert-Butylbenzene	98-06-6	5.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	5.0	N.D.
sec-Butylbenzene	135-98-8	5.0	N.D.
4-Isopropyltoluene	99-87-6	5.0	N.D.
1,3-Dichlorobenzene	541-73-1	5.0	N.D.
1,4-Dichlorobenzene	106-46-7	5.0	N.D.
n-Butylbenzene	104-51-8	5.0	N.D.
1,2-Dichlorobenzene	95-50-1	5.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	5.0	N.D.
Hexachlorobutadiene	87-68-3	5.0	N.D.
Naphthalene	91-20-3	5.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	99
Toluene-d8	93
4-Bromofluorobenzene	95

ORANGE COAST ANALYTICAL, INC.
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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-4
Laboratory Sample Number: 98090163
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	N.D.
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	21
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	47
1,2-Dichloroethane	107-06-2	10	33
1,1-Dichloroethene	75-35-4	10	1,800
Trans 1,2-Dichloroethene	156-60-5	10	58
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	19
1,1,2-Trichloroethane	79-00-5	10	28
Trichloroethene	79-01-6	10	2,600
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	83
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-4
Laboratory Sample Number: 98090163
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	96
Toluene-d8	93
4-Bromofluorobenzene	94

ORANGE COAST ANALYTICAL, INC.
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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-5
Laboratory Sample Number: 98090164
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	12.5	N.D.
Bromodichloromethane	75-27-4	12.5	N.D.
Bromoform	75-25-2	12.5	N.D.
Bromomethane	74-83-9	25.0	N.D.
Carbon Disulfide	75-15-0	12.5	N.D.
Carbon tetrachloride	56-23-5	12.5	N.D.
Chlorobenzene	108-90-7	12.5	N.D.
Chlorodibromomethane	124-48-1	12.5	N.D.
Chloroethane	75-00-3	12.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	12.5	N.D.
Chloroform	67-66-3	12.5	24
Chloromethane	74-87-3	12.5	N.D.
1,1-Dichloroethane	75-34-3	12.5	N.D.
1,2-Dichloroethane	107-06-2	12.5	N.D.
1,1-Dichloroethene	75-35-4	12.5	470
Trans 1,2-Dichloroethene	156-60-5	12.5	N.D.
1,2-Dichloropropane	78-87-5	12.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	12.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	12.5	N.D.
Ethylbenzene	100-41-4	12.5	N.D.
Methylene chloride	75-09-2	62.5	N.D.
Styrene	100-42-5	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
Tetrachloroethene	127-18-4	12.5	N.D.
Toluene	108-88-3	12.5	N.D.
1,1,1-Trichloroethane	71-55-6	12.5	N.D.
1,1,2-Trichloroethane	79-00-5	12.5	N.D.
Trichloroethene	79-01-6	12.5	3,500
Trichlorofluoromethane	75-69-4	12.5	N.D.
Vinyl acetate	108-05-4	25.0	N.D.
Vinyl chloride	75-01-4	12.5	N.D.
Total Xylenes	1330-20-7	25.0	N.D.
Dichlorodifluoromethane	75-71-8	12.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	12.5	N.D.
2,2-Dichloropropane	594-20-7	12.5	N.D.
Bromochloromethane	74-97-5	12.5	N.D.
1,1-Dichloropropene	563-58-6	12.5	N.D.
Dibromomethane	74-95-3	12.5	N.D.
1,2-Dibromoethane	106-93-4	12.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-5
Laboratory Sample Number: 98090164
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	12.5	N.D.
Isopropylbenzene	98-82-8	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
1,2,3-Trichloropropane	96-18-4	12.5	N.D.
Bromobenzene	108-86-1	12.5	N.D.
n-Propylbenzene	103-65-1	12.5	N.D.
2-Chlorotoluene	95-49-8	12.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	12.5	N.D.
4-Chlorotoluene	106-43-4	12.5	N.D.
tert-Butylbenzene	98-06-6	12.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	12.5	N.D.
sec-Butylbenzene	135-98-8	12.5	N.D.
4-Isopropyltoluene	99-87-6	12.5	N.D.
1,3-Dichlorobenzene	541-73-1	12.5	N.D.
1,4-Dichlorobenzene	106-46-7	12.5	N.D.
n-Butylbenzene	104-51-8	12.5	N.D.
1,2-Dichlorobenzene	95-50-1	12.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	12.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	12.5	N.D.
Hexachlorobutadiene	87-68-3	12.5	N.D.
Naphthalene	91-20-3	12.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	12.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	96
Toluene-d8	94
4-Bromofluorobenzene	95

ORANGE COAST ANALYTICAL, INC.
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Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

Sample Description: Water, TMW-22
Laboratory Sample Number: 98090165
Laboratory Reference #: IES 10457

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	N.D.
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	18
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	N.D.
1,2-Dichloroethane	107-06-2	10	N.D.
1,1-Dichloroethene	75-35-4	10	340
Trans 1,2-Dichloroethene	156-60-5	10	N.D.
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	N.D.
1,1,2-Trichloroethane	79-00-5	10	N.D.
Trichloroethene	79-01-6	10	2,600
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	N.D.
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-22
Laboratory Sample Number: 98090165
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	96
Toluene-d8	95
4-Bromofluorobenzene	96

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-7
Laboratory Sample Number: 98090166
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	12.5	19
Bromodichloromethane	75-27-4	12.5	N.D.
Bromoform	75-25-2	12.5	N.D.
Bromomethane	74-83-9	25.0	N.D.
Carbon Disulfide	75-15-0	12.5	N.D.
Carbon tetrachloride	56-23-5	12.5	N.D.
Chlorobenzene	108-90-7	12.5	N.D.
Chlorodibromomethane	124-48-1	12.5	N.D.
Chloroethane	75-00-3	12.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	12.5	N.D.
Chloroform	67-66-3	12.5	13
Chloromethane	74-87-3	12.5	N.D.
1,1-Dichloroethane	75-34-3	12.5	36
1,2-Dichloroethane	107-06-2	12.5	24
1,1-Dichloroethene	75-35-4	12.5	1,700
Trans 1,2-Dichloroethene	156-60-5	12.5	48
1,2-Dichloropropane	78-87-5	12.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	12.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	12.5	N.D.
Ethylbenzene	100-41-4	12.5	N.D.
Methylene chloride	75-09-2	62.5	N.D.
Styrene	100-42-5	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
Tetrachloroethene	127-18-4	12.5	N.D.
Toluene	108-88-3	12.5	N.D.
1,1,1-Trichloroethane	71-55-6	12.5	N.D.
1,1,2-Trichloroethane	79-00-5	12.5	17
Trichloroethene	79-01-6	12.5	2,700
Trichlorofluoromethane	75-69-4	12.5	N.D.
Vinyl acetate	108-05-4	25.0	N.D.
Vinyl chloride	75-01-4	12.5	N.D.
Total Xylenes	1330-20-7	25.0	N.D.
Dichlorodifluoromethane	75-71-8	12.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	12.5	70
2,2-Dichloropropane	594-20-7	12.5	N.D.
Bromochloromethane	74-97-5	12.5	N.D.
1,1-Dichloropropene	563-58-6	12.5	N.D.
Dibromomethane	74-95-3	12.5	N.D.
1,2-Dibromoethane	106-93-4	12.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-7
Laboratory Sample Number: 98090166
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	12.5	N.D.
Isopropylbenzene	98-82-8	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
1,2,3-Trichloropropane	96-18-4	12.5	N.D.
Bromobenzene	108-86-1	12.5	N.D.
n-Propylbenzene	103-65-1	12.5	N.D.
2-Chlorotoluene	95-49-8	12.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	12.5	N.D.
4-Chlorotoluene	106-43-4	12.5	N.D.
tert-Butylbenzene	98-06-6	12.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	12.5	N.D.
sec-Butylbenzene	135-98-8	12.5	N.D.
4-Isopropyltoluene	99-87-6	12.5	N.D.
1,3-Dichlorobenzene	541-73-1	12.5	N.D.
1,4-Dichlorobenzene	106-46-7	12.5	N.D.
n-Butylbenzene	104-51-8	12.5	N.D.
1,2-Dichlorobenzene	95-50-1	12.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	12.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	12.5	N.D.
Hexachlorobutadiene	87-68-3	12.5	N.D.
Naphthalene	91-20-3	12.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	12.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	95
Toluene-d8	93
4-Bromofluorobenzene	95

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-3
Laboratory Sample Number: 98090167
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	100	N.D.
Bromodichloromethane	75-27-4	100	N.D.
Bromoform	75-25-2	100	N.D.
Bromomethane	74-83-9	200	N.D.
Carbon Disulfide	75-15-0	100	N.D.
Carbon tetrachloride	56-23-5	100	N.D.
Chlorobenzene	108-90-7	100	N.D.
Chlorodibromomethane	124-48-1	100	N.D.
Chloroethane	75-00-3	100	N.D.
2-Chloroethyl vinyl ether	110-75-8	100	N.D.
Chloroform	67-66-3	100	N.D.
Chloromethane	74-87-3	100	N.D.
1,1-Dichloroethane	75-34-3	100	N.D.
1,2-Dichloroethane	107-06-2	100	N.D.
1,1-Dichloroethene	75-35-4	100	150
Trans 1,2-Dichloroethene	156-60-5	100	N.D.
1,2-Dichloropropane	78-87-5	100	N.D.
cis-1,3-Dichloropropene	10061-01-5	100	N.D.
trans-1,3-Dichloropropene	10061-02-6	100	N.D.
Ethylbenzene	100-41-4	100	N.D.
Methylene chloride	75-09-2	500	N.D.
Styrene	100-42-5	100	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	100	N.D.
Tetrachloroethene	127-18-4	100	N.D.
Toluene	108-88-3	100	N.D.
1,1,1-Trichloroethane	71-55-6	100	N.D.
1,1,2-Trichloroethane	79-00-5	100	N.D.
Trichloroethene	79-01-6	100	12,000
Trichlorofluoromethane	75-69-4	100	N.D.
Vinyl acetate	108-05-4	200	N.D.
Vinyl chloride	75-01-4	100	N.D.
Total Xylenes	1330-20-7	200	N.D.
Dichlorodifluoromethane	75-71-8	100	N.D.
cis-1-2,-Dichloroethene	156-59-2	100	N.D.
2,2-Dichloropropane	594-20-7	100	N.D.
Bromochloromethane	74-97-5	100	N.D.
1,1-Dichloropropene	563-58-6	100	N.D.
Dibromomethane	74-95-3	100	N.D.
1,2-Dibromoethane	106-93-4	100	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-3
Laboratory Sample Number: 98090167
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	100	N.D.
Isopropylbenzene	98-82-8	100	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	100	N.D.
1,2,3-Trichloropropane	96-18-4	100	N.D.
Bromobenzene	108-86-1	100	N.D.
n-Propylbenzene	103-65-1	100	N.D.
2-Chlorotoluene	95-49-8	100	N.D.
1,3,5-Trimethylbenzene	108-67-8	100	N.D.
4-Chlorotoluene	106-43-4	100	N.D.
tert-Butylbenzene	98-06-6	100	N.D.
1,2,4-Trimethylbenzene	95-63-6	100	N.D.
sec-Butylbenzene	135-98-8	100	N.D.
4-Isopropyltoluene	99-87-6	100	N.D.
1,3-Dichlorobenzene	541-73-1	100	N.D.
1,4-Dichlorobenzene	106-46-7	100	N.D.
n-Butylbenzene	104-51-8	100	N.D.
1,2-Dichlorobenzene	95-50-1	100	N.D.
1-2-Dibromo-3-CPA	96-12-8	100	N.D.
1,2,4-Trichlorobenzene	120-82-1	100	N.D.
Hexachlorobutadiene	87-68-3	100	N.D.
Naphthalene	91-20-3	100	N.D.
1,2,3-Trichlorobenzene	87-61-6	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	95
Toluene-d8	94
4-Bromofluorobenzene	95

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-8
Laboratory Sample Number: 98090168
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/01/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	12.5	23
Bromodichloromethane	75-27-4	12.5	N.D.
Bromoform	75-25-2	12.5	N.D.
Bromomethane	74-83-9	25.0	N.D.
Carbon Disulfide	75-15-0	12.5	N.D.
Carbon tetrachloride	56-23-5	12.5	N.D.
Chlorobenzene	108-90-7	12.5	N.D.
Chlorodibromomethane	124-48-1	12.5	N.D.
Chloroethane	75-00-3	12.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	12.5	N.D.
Chloroform	67-66-3	12.5	14
Chloromethane	74-87-3	12.5	N.D.
1,1-Dichloroethane	75-34-3	12.5	31
1,2-Dichloroethane	107-06-2	12.5	N.D.
1,1-Dichloroethene	75-35-4	12.5	2,000
Trans 1,2-Dichloroethene	156-60-5	12.5	40
1,2-Dichloropropane	78-87-5	12.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	12.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	12.5	N.D.
Ethylbenzene	100-41-4	12.5	N.D.
Methylene chloride	75-09-2	62.5	N.D.
Styrene	100-42-5	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
Tetrachloroethene	127-18-4	12.5	N.D.
Toluene	108-88-3	12.5	N.D.
1,1,1-Trichloroethane	71-55-6	12.5	N.D.
1,1,2-Trichloroethane	79-00-5	12.5	N.D.
Trichloroethene	79-01-6	12.5	2,600
Trichlorofluoromethane	75-69-4	12.5	N.D.
Vinyl acetate	108-05-4	25.0	N.D.
Vinyl chloride	75-01-4	12.5	N.D.
Total Xylenes	1330-20-7	25.0	N.D.
Dichlorodifluoromethane	75-71-8	12.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	12.5	54
2,2-Dichloropropane	594-20-7	12.5	N.D.
Bromochloromethane	74-97-5	12.5	N.D.
1,1-Dichloropropene	563-58-6	12.5	N.D.
Dibromomethane	74-95-3	12.5	N.D.
1,2-Dibromoethane	106-93-4	12.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-8
Laboratory Sample Number: 98090168
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	12.5	N.D.
Isopropylbenzene	98-82-8	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
1,2,3-Trichloropropane	96-18-4	12.5	N.D.
Bromobenzene	108-86-1	12.5	N.D.
n-Propylbenzene	103-65-1	12.5	N.D.
2-Chlorotoluene	95-49-8	12.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	12.5	N.D.
4-Chlorotoluene	106-43-4	12.5	N.D.
tert-Butylbenzene	98-06-6	12.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	12.5	N.D.
sec-Butylbenzene	135-98-8	12.5	N.D.
4-Isopropyltoluene	99-87-6	12.5	N.D.
1,3-Dichlorobenzene	541-73-1	12.5	N.D.
1,4-Dichlorobenzene	106-46-7	12.5	N.D.
n-Butylbenzene	104-51-8	12.5	N.D.
1,2-Dichlorobenzene	95-50-1	12.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	12.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	12.5	N.D.
Hexachlorobutadiene	87-68-3	12.5	N.D.
Naphthalene	91-20-3	12.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	12.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	98
Toluene-d8	95
4-Bromofluorobenzene	95

APPENDIX B

ORANGE COAST ANALYTICAL, INC.
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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, TMW-2
Laboratory Sample Number: 98090169
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	250	N.D.
Bromodichloromethane	75-27-4	250	N.D.
Bromoform	75-25-2	250	N.D.
Bromomethane	74-83-9	500	N.D.
Carbon Disulfide	75-15-0	250	N.D.
Carbon tetrachloride	56-23-5	250	N.D.
Chlorobenzene	108-90-7	250	N.D.
Chlorodibromomethane	124-48-1	250	N.D.
Chloroethane	75-00-3	250	N.D.
2-Chloroethyl vinyl ether	110-75-8	250	N.D.
Chloroform	67-66-3	250	290
Chloromethane	74-87-3	250	N.D.
1,1-Dichloroethane	75-34-3	250	1,500
1,2-Dichloroethane	107-06-2	250	N.D.
1,1-Dichloroethene	75-35-4	250	34,000
Trans 1,2-Dichloroethene	156-60-5	250	650
1,2-Dichloropropane	78-87-5	250	N.D.
cis-1,3-Dichloropropene	10061-01-5	250	N.D.
trans-1,3-Dichloropropene	10061-02-6	250	N.D.
Ethylbenzene	100-41-4	250	N.D.
Methylene chloride	75-09-2	1250	N.D.
Styrene	100-42-5	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
Tetrachloroethene	127-18-4	250	N.D.
Toluene	108-88-3	250	N.D.
1,1,1-Trichloroethane	71-55-6	250	5,600
1,1,2-Trichloroethane	79-00-5	250	N.D.
Trichloroethene	79-01-6	250	31,000
Trichlorofluoromethane	75-69-4	250	N.D.
Vinyl acetate	108-05-4	500	N.D.
Vinyl chloride	75-01-4	250	N.D.
Total Xylenes	1330-20-7	500	N.D.
Dichlorodifluoromethane	75-71-8	250	N.D.
cis-1-2,-Dichloroethene	156-59-2	250	770
2,2-Dichloropropane	594-20-7	250	N.D.
Bromochloromethane	74-97-5	250	N.D.
1,1-Dichloropropene	563-58-6	250	N.D.
Dibromomethane	74-95-3	250	N.D.
1,2-Dibromoethane	106-93-4	250	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-2
Laboratory Sample Number: 98090169
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	250	N.D.
Isopropylbenzene	98-82-8	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
1,2,3-Trichloropropane	96-18-4	250	N.D.
Bromobenzene	108-86-1	250	N.D.
n-Propylbenzene	103-65-1	250	N.D.
2-Chlorotoluene	95-49-8	250	N.D.
1,3,5-Trimethylbenzene	108-67-8	250	N.D.
4-Chlorotoluene	106-43-4	250	N.D.
tert-Butylbenzene	98-06-6	250	N.D.
1,2,4-Trimethylbenzene	95-63-6	250	N.D.
sec-Butylbenzene	135-98-8	250	N.D.
4-Isopropyltoluene	99-87-6	250	N.D.
1,3-Dichlorobenzene	541-73-1	250	N.D.
1,4-Dichlorobenzene	106-46-7	250	N.D.
n-Butylbenzene	104-51-8	250	N.D.
1,2-Dichlorobenzene	95-50-1	250	N.D.
1-2-Dibromo-3-CPA	96-12-8	250	N.D.
1,2,4-Trichlorobenzene	120-82-1	250	N.D.
Hexachlorobutadiene	87-68-3	250	N.D.
Naphthalene	91-20-3	250	N.D.
1,2,3-Trichlorobenzene	87-61-6	250	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	99
Toluene-d8	93
4-Bromofluorobenzene	95

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Harding Lawson Associates
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30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/01/98
Reported: 10/01/98

Sample Description: Water, WCC-9S
Laboratory Sample Number: 98090170
Laboratory Reference #: IES 10457

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	1.0	N.D.
Bromodichloromethane	75-27-4	1.0	N.D.
Bromoform	75-25-2	1.0	N.D.
Bromomethane	74-83-9	2.0	N.D.
Carbon Disulfide	75-15-0	1.0	N.D.
Carbon tetrachloride	56-23-5	1.0	N.D.
Chlorobenzene	108-90-7	1.0	N.D.
Chlorodibromomethane	124-48-1	1.0	N.D.
Chloroethane	75-00-3	1.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	1.0	N.D.
Chloroform	67-66-3	1.0	12
Chloromethane	74-87-3	1.0	N.D.
1,1-Dichloroethane	75-34-3	1.0	N.D.
1,2-Dichloroethane	107-06-2	1.0	N.D.
1,1-Dichloroethene	75-35-4	1.0	17
Trans 1,2-Dichloroethene	156-60-5	1.0	N.D.
1,2-Dichloropropane	78-87-5	1.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	1.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	1.0	N.D.
Ethylbenzene	100-41-4	1.0	N.D.
Methylene chloride	75-09-2	5.0	N.D.
Styrene	100-42-5	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
Tetrachloroethene	127-18-4	1.0	N.D.
Toluene	108-88-3	1.0	N.D.
1,1,1-Trichloroethane	71-55-6	1.0	3.5
1,1,2-Trichloroethane	79-00-5	1.0	N.D.
Trichloroethene	79-01-6	1.0	130
Trichlorofluoromethane	75-69-4	1.0	N.D.
Vinyl acetate	108-05-4	2.0	N.D.
Vinyl chloride	75-01-4	1.0	N.D.
Total Xylenes	1330-20-7	2.0	N.D.
Dichlorodifluoromethane	75-71-8	1.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	1.0	N.D.
2,2-Dichloropropane	594-20-7	1.0	N.D.
Bromochloromethane	74-97-5	1.0	N.D.
1,1-Dichloropropene	563-58-6	1.0	N.D.
Dibromomethane	74-95-3	1.0	N.D.
1,2-Dibromoethane	106-93-4	1.0	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-9S
Laboratory Sample Number: 98090170
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	1.0	N.D.
Isopropylbenzene	98-82-8	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
1,2,3-Trichloropropane	96-18-4	1.0	N.D.
Bromobenzene	108-86-1	1.0	N.D.
n-Propylbenzene	103-65-1	1.0	N.D.
2-Chlorotoluene	95-49-8	1.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	1.0	N.D.
4-Chlorotoluene	106-43-4	1.0	N.D.
tert-Butylbenzene	98-06-6	1.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	1.0	N.D.
sec-Butylbenzene	135-98-8	1.0	N.D.
4-Isopropyltoluene	99-87-6	1.0	N.D.
1,3-Dichlorobenzene	541-73-1	1.0	N.D.
1,4-Dichlorobenzene	106-46-7	1.0	N.D.
n-Butylbenzene	104-51-8	1.0	N.D.
1,2-Dichlorobenzene	95-50-1	1.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	1.0	N.D.
Hexachlorobutadiene	87-68-3	1.0	N.D.
Naphthalene	91-20-3	1.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	97
Toluene-d8	98
4-Bromofluorobenzene	100

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Client Project ID: Boeing
Client Project #: 40711

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

Sample Description: Water, WCC-12S
Laboratory Sample Number: 98090171
Laboratory Reference #: IES 10457

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	10
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	130
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	120
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	3.2
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	600
Trichlorofluoromethane	75-69-4	2.5	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	3.8
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-12S
Laboratory Sample Number: 98090171
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	109
Toluene-d8	91
4-Bromofluorobenzene	96

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, WCC-6S
Laboratory Sample Number: 98090172
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	12.5	N.D.
Bromodichloromethane	75-27-4	12.5	N.D.
Bromoform	75-25-2	12.5	N.D.
Bromomethane	74-83-9	25.0	N.D.
Carbon Disulfide	75-15-0	12.5	N.D.
Carbon tetrachloride	56-23-5	12.5	N.D.
Chlorobenzene	108-90-7	12.5	N.D.
Chlorodibromomethane	124-48-1	12.5	N.D.
Chloroethane	75-00-3	12.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	12.5	N.D.
Chloroform	67-66-3	12.5	N.D.
Chloromethane	74-87-3	12.5	N.D.
1,1-Dichloroethane	75-34-3	12.5	16
1,2-Dichloroethane	107-06-2	12.5	N.D.
1,1-Dichloroethene	75-35-4	12.5	2,800
Trans 1,2-Dichloroethene	156-60-5	12.5	22
1,2-Dichloropropane	78-87-5	12.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	12.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	12.5	N.D.
Ethylbenzene	100-41-4	12.5	N.D.
Methylene chloride	75-09-2	62.5	N.D.
Styrene	100-42-5	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
Tetrachloroethene	127-18-4	12.5	N.D.
Toluene	108-88-3	12.5	N.D.
1,1,1-Trichloroethane	71-55-6	12.5	38
1,1,2-Trichloroethane	79-00-5	12.5	N.D.
Trichloroethene	79-01-6	12.5	1,500
Trichlorofluoromethane	75-69-4	12.5	N.D.
Vinyl acetate	108-05-4	25.0	N.D.
Vinyl chloride	75-01-4	12.5	N.D.
Total Xylenes	1330-20-7	25.0	N.D.
Dichlorodifluoromethane	75-71-8	12.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	12.5	210
2,2-Dichloropropane	594-20-7	12.5	N.D.
Bromochloromethane	74-97-5	12.5	N.D.
1,1-Dichloropropene	563-58-6	12.5	N.D.
Dibromomethane	74-95-3	12.5	N.D.
1,2-Dibromoethane	106-93-4	12.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-6S
Laboratory Sample Number: 98090172
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	12.5	N.D.
Isopropylbenzene	98-82-8	12.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	12.5	N.D.
1,2,3-Trichloropropane	96-18-4	12.5	N.D.
Bromobenzene	108-86-1	12.5	N.D.
n-Propylbenzene	103-65-1	12.5	N.D.
2-Chlorotoluene	95-49-8	12.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	12.5	N.D.
4-Chlorotoluene	106-43-4	12.5	N.D.
tert-Butylbenzene	98-06-6	12.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	12.5	N.D.
sec-Butylbenzene	135-98-8	12.5	N.D.
4-Isopropyltoluene	99-87-6	12.5	N.D.
1,3-Dichlorobenzene	541-73-1	12.5	N.D.
1,4-Dichlorobenzene	106-46-7	12.5	N.D.
n-Butylbenzene	104-51-8	12.5	N.D.
1,2-Dichlorobenzene	95-50-1	12.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	12.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	12.5	N.D.
Hexachlorobutadiene	87-68-3	12.5	N.D.
Naphthalene	91-20-3	12.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	12.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	105
Toluene-d8	92
4-Bromofluorobenzene	96

ORANGE COAST ANALYTICAL, INC.
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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
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Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, WCC-3S
Laboratory Sample Number: 98090173
Laboratory Reference #: IES 10457

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	250	390
Bromodichloromethane	75-27-4	250	N.D.
Bromoform	75-25-2	250	N.D.
Bromomethane	74-83-9	500	N.D.
Carbon Disulfide	75-15-0	250	N.D.
Carbon tetrachloride	56-23-5	250	N.D.
Chlorobenzene	108-90-7	250	N.D.
Chlorodibromomethane	124-48-1	250	N.D.
Chloroethane	75-00-3	250	N.D.
2-Chloroethyl vinyl ether	110-75-8	250	N.D.
Chloroform	67-66-3	250	N.D.
Chloromethane	74-87-3	250	N.D.
1,1-Dichloroethane	75-34-3	250	870
1,2-Dichloroethane	107-06-2	250	N.D.
1,1-Dichloroethene	75-35-4	250	33,000
Trans 1,2-Dichloroethene	156-60-5	250	980
1,2-Dichloropropane	78-87-5	250	N.D.
cis-1,3-Dichloropropene	10061-01-5	250	N.D.
trans-1,3-Dichloropropene	10061-02-6	250	N.D.
Ethylbenzene	100-41-4	250	N.D.
Methylene chloride	75-09-2	1250	N.D.
Styrene	100-42-5	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
Tetrachloroethene	127-18-4	250	N.D.
Toluene	108-88-3	250	59,000
1,1,1-Trichloroethane	71-55-6	250	4,000
1,1,2-Trichloroethane	79-00-5	250	N.D.
Trichloroethene	79-01-6	250	N.D.
Trichlorofluoromethane	75-69-4	250	N.D.
Vinyl acetate	108-05-4	500	N.D.
Vinyl chloride	75-01-4	250	N.D.
Total Xylenes	1330-20-7	500	N.D.
Dichlorodifluoromethane	75-71-8	250	N.D.
cis-1-2,-Dichloroethene	156-59-2	250	9,400
2,2-Dichloropropane	594-20-7	250	N.D.
Bromochloromethane	74-97-5	250	N.D.
1,1-Dichloropropene	563-58-6	250	N.D.
Dibromomethane	74-95-3	250	N.D.
1,2-Dibromoethane	106-93-4	250	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-3S
Laboratory Sample Number: 98090173
Laboratory Reference #: IES 10457

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
1,3-Dichloropropane	142-28-9	250	N.D.
Isopropylbenzene	98-82-8	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
1,2,3-Trichloropropane	96-18-4	250	N.D.
Bromobenzene	108-86-1	250	N.D.
n-Propylbenzene	103-65-1	250	N.D.
2-Chlorotoluene	95-49-8	250	N.D.
1,3,5-Trimethylbenzene	108-67-8	250	N.D.
4-Chlorotoluene	106-43-4	250	N.D.
tert-Butylbenzene	98-06-6	250	N.D.
1,2,4-Trimethylbenzene	95-63-6	250	N.D.
sec-Butylbenzene	135-98-8	250	N.D.
4-Isopropyltoluene	99-87-6	250	N.D.
1,3-Dichlorobenzene	541-73-1	250	N.D.
1,4-Dichlorobenzene	106-46-7	250	N.D.
n-Butylbenzene	104-51-8	250	N.D.
1,2-Dichlorobenzene	95-50-1	250	N.D.
1-2-Dibromo-3-CPA	96-12-8	250	N.D.
1,2,4-Trichlorobenzene	120-82-1	250	N.D.
Hexachlorobutadiene	87-68-3	250	N.D.
Naphthalene	91-20-3	250	N.D.
1,2,3-Trichlorobenzene	87-61-6	250	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	97
Toluene-d8	94
4-Bromofluorobenzene	95

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98090174
Laboratory Reference #: IES 10457

Sampled: ---
Received: 09/23/98
Analyzed: 09/30/98
Reported: 10/01/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

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3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98090174
Laboratory Reference #: IES 10457

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	97
Toluene-d8	95
4-Bromofluorobenzene	96

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QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 10/01/98
Laboratory Sample No : 98090152
Laboratory Reference No : IES 10457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	20	17	19	85	95	11
1,1-Dichloroethene	0.0	20	18	20	90	100	11
Trichloroethene	0.0	20	18	19	90	95	5
Toluene	0.0	20	18	19	90	95	5
Chlorobenzene	0.0	20	17	19	87	95	9

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

ORANGE COAST ANALYTICAL

MARK NOORANI
Laboratory Director

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QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 09/30/98
Laboratory Sample No : 98090174
Laboratory Reference No : IES 10457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	20	17	18	85	90	6
1,1-Dichloroethene	0.0	20	17	19	85	95	11
Trichloroethene	0.0	20	17	18	85	90	6
Toluene	0.0	20	16	17	80	85	6
Chlorobenzene	0.0	20	17	18	85	90	6

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

ORANGE COAST ANALYTICAL

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LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print) : Mark Noorani

Client: Harding Lawson

Project No.: 40711

Project Name: Boeing

Laboratory Reference: IES 10457

Analytical Method: 8260

Date Sampled: 09/22/98
Date Received: 09/23/98
Date Reported: 10/01/98

Sample Matrix: Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

METHOD ID	LIMIT1 SOIL	LIMIT1 WATER	LAB CAS ID	PF CODE	SURROG FLG	Units	LAB CHEM	98090159	98090160	98090161	98090162	98090163	98090164	98090165	98090166
							SAMP TYPE	W	W	W	W	W	W	W	W
							RES CODE	PP01	PP01	PP01	PP01	PP01	PP01	PP01	PP01
							SAMP ID	MW-21	TMW-9	TMW-6	TMW-1	TMW-4	TMW-5	TMW-22	TMW-7
							SAMP DATE	09/22/98	09/22/98	09/22/98	09/22/98	09/22/98	09/22/98	09/22/98	09/22/98
							SAMP TIME	7:00	10:15	11:05	11:45	12:10	12:45	12:50	13:20
							SAMP DEPTH								
							PRESERVED								
							ICED	Y	Y	Y					Y
							RECEIVED	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
							REC TIME	16:46	16:48	16:48	16:48	16:48	16:48	16:48	16:48
							BASIS	W	W	W	W	W	W	W	W
							Tested								
418.1	8.0	0.5		T		ppm	Extractable Hydrocarbons								
							Tested								
6010	5.0	0.5		T		ppm	Antimony								
6010	1.0	0.1		T		ppm	Arsenic								
6010	0.1	0.01		T		ppm	Barium								
6010	0.1	0.01		T		ppm	Beryllium								
6010	0.1	0.01		T		ppm	Cadmium								
							Tested								
7196	0.5	0.01		T		ppm	Chromium (VI)								
							Tested								
6010	0.1	0.01		T		ppm	Chromium Total								
6010	0.5	0.1		T		ppm	Cobalt								
6010	0.1	0.01		T		ppm	Copper								
6010	1.0	0.1		T		ppm	Lead								
							Tested								
7471	0.01	0.002		T		ppm	Mercury								
							Tested								
6010	0.5	0.1		T		ppm	Molybdenum								
6010	0.5	0.1		T		ppm	Nickel								
6010	1.0	0.1		T		ppm	Selenium								
6010	0.1	0.1		T		ppm	Silver								
6010	5.0	0.5		T		ppm	Thallium								
6010	0.5	0.1		T		ppm	Vanadium								
6010	0.1	0.01		T		ppm	Zinc								
							Tested								
STLC		5.0		S		ppm	Antimony								
		1.0		S		ppm	Arsenic								
		0.1		S		ppm	Barium								
		0.1		S		ppm	Beryllium								
		0.1		S		ppm	Cadmium								
		0.5		S		ppm	Chromium (VI)								
		0.1		S		ppm	Chromium Total								
		0.5		S		ppm	Cobalt								
		0.1		S		ppm	Copper								

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		1.0		S		ppm	Lead								
		0.01		S		ppm	Mercury								
		0.5		S		ppm	Molybdenum								
		0.5		S		ppm	Nickel								
		1.0		S		ppm	Selenium								
		0.1		S		ppm	Silver								
		5.0		S		ppm	Thallium								
		0.5		S		ppm	Vanadium								
		0.1		S		ppm	Zinc								
							Tested								
TCLP		5.0		C		ppm	Antimony								
		1.0		C		ppm	Arsenic								
		0.1		C		ppm	Barium								
		0.1		C		ppm	Beryllium								
		0.1		C		ppm	Cadmium								
		0.5		C		ppm	Chromium (VI)								
		0.1		C		ppm	Chromium Total								
		0.5		C		ppm	Cobalt								
		0.1		C		ppm	Copper								
		1.0		C		ppm	Lead								
		0.01		C		ppm	Mercury								
		0.5		C		ppm	Molybdenum								
		0.5		C		ppm	Nickel								
		1.0		C		ppm	Selenium								
		0.1		C		ppm	Silver								
		5.0		C		ppm	Thallium								
		0.5		C		ppm	Vanadium								
		0.1		C		ppm	Zinc								
							Tested	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
							Dilution Factor	1	2	5	10	20	25	20	25
8260	2.5	0.5	71-43-2	T		ppb	Benzene	<	<	<	<	<	<	<	19
8260	2.5	0.5	75-27-4	T		ppb	Bromodichloromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-25-2	T		ppb	Bromoform	<	<	<	<	<	<	<	<
8260	2.5	1.0	74-83-9	T		ppb	Bromomethane	<	<	<	<	<	<	<	<
8260	5.0	0.5	75-15-0	T		ppb	Carbon Disulfide	<	<	<	<	<	<	<	<
8260	2.5	0.5	56-23-5	T		ppb	Carbon tetrachloride	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-90-7	T		ppb	Chlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	124-48-1	T		ppb	Chlorodibromomethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-00-3	T		ppb	Chloroethane	<	<	<	<	<	<	<	<
8260	5.0	0.5	110-75-8	T		ppb	2-Chloroethyl vinyl ether	<	<	<	<	<	<	<	<
8260	2.5	0.5	67-66-3	T		ppb	Chloroform	<	2.0	630	5.4	21	24	18	13
8260	2.5	0.5	74-87-3	T		ppb	Chloromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-34-3	T		ppb	1,1-Dichloroethane	<	<	<	<	47	<	<	36
8260	2.5	0.5	107-06-2	T		ppb	1,2-Dichloroethane	<	<	<	<	33	<	<	24
8260	2.5	0.5	75-35-4	T		ppb	1,1-Dichloroethene	<	14	11	730	1,800	470	340	1,700
8260	2.5	0.5	156-60-5	T		ppb	Trans 1,2-Dichloroethene	<	<	<	<	58	<	<	48
8260	2.5	0.5	78-87-5	T		ppb	1,2-Dichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	10061-01-5	T		ppb	cis-1,3-Dichloropropene	<	<	<	<	<	<	<	<
8260	2.5	0.5	10061-02-6	T		ppb	trans-1,3-Dichloropropene	<	<	<	<	<	<	<	<
8260	2.5	0.5	100-41-4	T		ppb	Ethylbenzene	<	<	<	<	<	<	<	<

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8260	5.0	2.5	75-09-2	T		ppb	Methylene chloride	<	<	<	<	<	<	<	<
8260	2.5	0.5	100-42-5	T		ppb	Styrene	<	<	<	<	<	<	<	<
8260	2.5	0.5	79-34-5	T		ppb	1,1,2,2-Tetrachloroethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	127-18-4	T		ppb	Tetrachloroethene	<	2.3	<	<	<	<	<	<
8260	2.5	0.5	108-88-3	T		ppb	Toluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	71-55-6	T		ppb	1,1,1-Trichloroethane	<	<	<	5.6	19	<	<	<
8260	2.5	0.5	79-00-5	T		ppb	1,1,2-Trichloroethane	<	<	<	<	28	<	<	17
8260	2.5	0.5	79-01-6	T		ppb	Trichloroethene	<	250	240	410	2,600	3,500	2,600	2,700
8260	5.0	0.5	75-69-4	T		ppb	Trichlorofluoromethane	<	<	<	<	<	<	<	<
8260	5.0	1.0	108-05-4	T		ppb	Vinyl acetate	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-01-4	T		ppb	Vinyl chloride	<	<	<	<	<	<	<	<
8260	2.5	1.0	1330-20-7	T		ppb	Total Xylenes	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-71-8	T		ppb	Dichlorodifluoromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	156-59-2	T		ppb	cis-1-2,-Dichloroethene	<	<	<	<	83	<	<	70
8260	2.5	0.5	594-20-7	T		ppb	2,2-Dichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	74-97-5	T		ppb	Bromochloromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	563-58-6	T		ppb	1,1-Dichloropropene	<	<	<	<	<	<	<	<
8260	2.5	0.5	74-95-3	T		ppb	Dibromomethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	106-93-4	T		ppb	1,2-Dibromoethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	142-28-9	T		ppb	1,3-Dichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	98-82-8	T		ppb	Isopropylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	79-34-5	T		ppb	1,1,2,2-Tetrachloroethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	96-18-4	T		ppb	1,2,3-Trichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-86-1	T		ppb	Bromobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	103-65-1	T		ppb	n-Propylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	95-49-8	T		ppb	2-Chlorotoluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-67-8	T		ppb	1,3,5-Trimethylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	106-43-4	T		ppb	4-Chlorotoluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	98-06-6	T		ppb	tert-Butylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	95-63-6	T		ppb	1,2,4-Trimethylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	135-98-8	T		ppb	sec-Butylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	99-87-6	T		ppb	4-Isopropyltoluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	541-73-1	T		ppb	1,3-Dichlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	106-46-7	T		ppb	1,4-Dichlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	104-51-8	T		ppb	n-Butylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	95-50-1	T		ppb	1,2-Dichlorobenzene	<	<	<	<	<	<	<	<
8260	5.0	1.0	96-12-8	T		ppb	1,2-Dibromo-3-CPA	<	<	<	<	<	<	<	<
8260	2.5	0.5	120-82-1	T		ppb	1,2,4-Trichlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	87-68-3	T		ppb	Hexachlorobutadiene	<	<	<	<	<	<	<	<
8260	2.5	0.5	91-20-3	T		ppb	Naphthalene	<	<	<	<	<	<	<	<
8260	2.5	0.5	87-61-6	T		ppb	1,2,3-Trichlorobenzene	<	<	<	<	<	<	<	<
															<
					T	%	Dibromofluoromethane	92	88	107	99	96	96	96	95
					T	%	Toluene-d8	94	95	91	93	93	94	95	93
					T	%	4-Bromofluorobenzene	93	93	96	95	94	95	96	95
							Tested								
							Dilution Factor								
8270	100	5.0	83-32-9	T		ppb	Acenaphthene								
8270	100	5.0	208-96-8	T		ppb	Acenaphthylene								
8270	100	5.0	62-53-3	T		ppb	Aniline								
8270	100	5.0	120-12-7	T		ppb	Anthracene								
8270	500	50	65-85-0	T		ppb	Benzoic Acid								

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8270	100	5.0	56-55-3	T		ppb	Benzo (a) anthracene										
8270	250	25	205-99-2	T		ppb	Benzo (b) fluoranthene										
8270	250	25	207-08-9	T		ppb	Benzo (k) fluoranthene										
8270	250	25	191-24-2	T		ppb	Benzo (g,h,i)perylene										
8270	250	25	50-32-8	T		ppb	Benzo (a) pyrene										
8270	100	50	100-51-6	T		ppb	Benzyl alcohol										
8270	100	5.0	111-91-1	T		ppb	Bis(2-chloroethoxy)methane										
8270	100	5.0	111-44-4	T		ppb	Bis(2-chloroethyl)ether										
8270	100	5.0	108-60-1	T		ppb	Bis(2-chloroisopropyl)ether										
8270	100	3.0	117-81-7	T		ppb	Bis(2-ethylhexyl)phthalate										
8270	100	5.0	101-55-3	T		ppb	4-Bromophenyl phenyl ether										
8270	100	5.0	85-68-7	T		ppb	Butyl benzyl phthalate										
8270	100	5.0	106-47-8	T		ppb	4-Chloroaniline										
8270	100	5.0	91-58-7	T		ppb	2-Chloronaphthalene										
8270	100	5.0	59-50-7	T		ppb	4-Chloro-3-methylphenol										
8270	100	5.0	95-57-8	T		ppb	2-Chlorophenol										
8270	100	5.0	7005-72-3	T		ppb	4-Chlorophenyl phenyl ether										
8270	100	5.0	218-01-9	T		ppb	Chrysene										
8270	100	25	53-70-3	T		ppb	Dibenz(a,h)anthracene										
8270	100	5.0	132-64-9	T		ppb	Dibenzofuran										
8270	250	5.0	84-74-2	T		ppb	Di-N-butyl phthalate										
8270	100	5.0	541-73-1	T		ppb	1,3-Dichlorobenzene										
8270	100	5.0	106-46-7	T		ppb	1,4-Dichlorobenzene										
8270	100	5.0	95-50-1	T		ppb	1,2-Dichlorobenzene										
8270	100	5.0	91-94-1	T		ppb	3,3-Dichlorobenzidine										
8270	100	5.0	120-83-2	T		ppb	2,4-Dichlorophenol										
8270	100	5.0	84-66-2	T		ppb	Diethyl phthalate										
8270	100	5.0	105-67-9	T		ppb	2,4-Dimethylphenol										
8270	100	5.0	131-11-3	T		ppb	Dimethyl phthalate										
8270	100	50	534-52-1	T		ppb	4,6-Dinitro-2-methylphenol										
8270	100	50	51-28-5	T		ppb	2,4-Dinitrophenol										
8270	250	5.0	121-14-2	T		ppb	2,4-Dinitrotoluene										
8270	250	5.0	606-20-2	T		ppb	2,6-Dinitrotoluene										
8270	250	25	117-84-0	T		ppb	Di-N-octyl phthalate										
8270	100	5.0	206-44-0	T		ppb	Fluoranthene										
8270	100	5.0	86-73-7	T		ppb	Fluorene										
8270	100	5.0	118-74-1	T		ppb	Hexachlorobenzene										
8270	100	5.0	87-68-3	T		ppb	Hexachlorobutadiene										
8270	100	5.0	77-47-4	T		ppb	Hexachlorocyclopentadiene										
8270	100	5.0	67-72-1	T		ppb	Hexachloroethane										
8270	250	25	193-39-5	T		ppb	Indeno(1,2,3-cd)pyrene										
8270	100	5.0	78-59-1	T		ppb	Isophorone										
8270	100	5.0	91-57-6	T		ppb	2-Methylnaphthalene										
8270	100	5.0	95-48-7	T		ppb	2-Methylphenol										
8270	100	5.0	106-44-5	T		ppb	4-Methylphenol										
8270	100	5.0	91-20-3	T		ppb	Naphthalene										
8270	250	50	88-74-4	T		ppb	2-Nitroaniline										
8270	250	50	99-09-2	T		ppb	3-Nitroaniline										
8270	250	50	100-01-6	T		ppb	4-Nitroaniline										
8270	100	5.0	98-95-3	T		ppb	Nitrobenzene										
8270	100	5.0	88-75-5	T		ppb	2-Nitrophenol										
8270	100	50	100-02-7	T		ppb	4-Nitrophenol										
8270	100	5.0	86-30-6	T		ppb	N-Nitrosodiphenylamine										

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8270	100	5.0	621-64-7	T		ppb	N-Nitroso-di-N-propylamine
8270	100	5.0	62-75-9	T		ppb	N-Nitrosodimethylamine
6270	250	50	87-86-5	T		ppb	Pentachlorophenol
8270	100	5.0	85-01-8	T		ppb	Phenanthrene
8270	100	5.0	108-95-2	T		ppb	Phenol
6270	100	5.0	129-00-0	T		ppb	Pyrene
8270	100	5.0	120-82-1	T		ppb	1,2,4-Trichlorobenzene
8270	100	5.0	95-95-4	T		ppb	2,4,5-Trichlorophenol
8270	100	5.0	88-06-2	T		ppb	2,4,6-Trichlorophenol
							Tested
							Dilution Factor
8080	20	5.0	12674-11-2	T		ppb	PCB-1016
8080	20	5.0	11104-26-2	T		ppb	PCB-1221
8080	20	5.0	11141-16-5	T		ppb	PCB-1232
8080	20	5.0	53469-21-9	T		ppb	PCB-1242
8080	20	5.0	12672-29-6	T		ppb	PCB-1248
8080	20	5.0	11097-69-1	T		ppb	PCB-1254
8080	20	5.0	11096-82-5	T		ppb	PCB-1260
							Tested
							Dilution Factor
8080	1.0	0.1	309-00-2	T		ppb	Aldrin
8080	1.0	0.2	319-84-6	T		ppb	alpha-BHC
8080	1.0	0.2	319-85-7	T		ppb	beta-BHC
8080	2.0	0.2	319-86-8	T		ppb	gamma-BHC
8080	1.0	0.2	58-89-9	T		ppb	gamma-BHC (Lindane)
8080	10	0.2	57-74-9	T		ppb	Chlordane
8080	2.0	0.5	72-54-8	T		ppb	4,4'-DDD
8080	5.0	0.1	72-55-9	T		ppb	4,4'-DDE
8080	1.0	0.1	50-29-3	T		ppb	4,4'-DDT
8080	2.0	0.5	60-57-1	T		ppb	Dieldrin
8080	1.0	0.5	959-98-8	T		ppb	Endosulfan I
8080	2.0	0.5	33213-65-9	T		ppb	Endosulfan II
8080	10	0.5	1031-07-8	T		ppb	Endosulfan sulfate
8080	2.0	0.02	72-20-8	T		ppb	Endrin
8080	2.0	0.2	7421-93-4	T		ppb	Endrin aldehyde
8080	1.0	0.1	76-44-8	T		ppb	Heptachlor
8080	1.0	0.2	1024-57-3	T		ppb	Heptachlor epoxide
8080	30	9.0	72-43-5	T		ppb	Methoxychlor
8080	35	0.5	8001-35-2	T		ppb	Toxaphene
							Tested
8015m				T		ppm	Up to & including C-12
8015m				T		ppm	C13-22
8015m				T		ppm	C23 & Higher
8015m	6.0	0.5		T		ppm	Total
							Tested
8015m	8.0	0.5		T		ppm	Diesel
							Tested
8015m	5.0	0.05		T		ppm	Gas

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9060	5.0	1.0		T		ppm	*Tested* TOC								
9010	0.40	0.020		T		ppm	*Tested* Cyanide								

(a) QC units for Method 8270 are reported in ng.

BOE-C6-0043179

								QC(W)							
W PP01 TMW-3 09/22/98 13:55 Y 09/23/98 16:48 W	W PP01 TMW-8 09/22/98 14:30 Y 09/23/98 16:48 W	W PP01 TMW-2 09/23/98 8:05 Y 09/23/98 16:48 W	W PP01 WCC-9S 09/23/98 10:25 Y 09/23/98 16:48 W	W PP01 WCC-12S 09/23/98 11:30 Y 09/23/98 16:48 W	W PP01 WCC-6S 09/23/98 12:35 Y 09/23/98 16:46 W	W PP01 WCC-3S 09/23/98 14:05 Y 09/23/98 16:48 W	W BT11 TRIP BLANK , N, H Y 09/23/98 16:48 W								
98090167	98090168	98090169	98090170	98090171	98090172	98090173	98090174	LAB SAMP NO.	R1	T CONC	SL[e]	DL[e]	RECOVER	D RECOVER	RPD

BOE-C6-0043180

09/30/98	10/01/98	09/30/98	10/01/98	09/30/98	09/30/98	09/30/98	09/30/96	09/30/96							
200	25	500	2	5	25	500	1								
<	23	<	<	<	<	390	<	98090174	0.0	20	17	18	85	90	6
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<	98090174	0.0	20	17	18	85	90	6
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	14	290	12	10	<	<	<								
<	<	<	<	<	<	<	<								
<	31	1,500	<	130	16	870	<								
<	<	<	<	<	<	<	<								
150	2,000	34,000	17	120	2,800	33,000	<	98090174	0.0	20	17	19	85	95	11
<	40	650	<	<	22	980	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
<	<	<	<	<	<	<	<								
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BOE-C6-0043181

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<	<	<	<	3.2	<	<	<
<	<	<	<	<	<	59,000	<
<	<	5,600	3.5	<	38	4,000	<
<	<	<	<	<	<	<	<
12,000	2,600	31,000	130	600	1,500	<	<
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<	54	770	<	3.8	210	9,400	<
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<	<	<	<	<	<	<	<
95	98	99	97	109	105	97	97
94	95	93	98	91	92	94	95
95	95	95	100	96	96	95	96

98090174	0.0	20	16	17	80	65	6
98090174	0.0	20	17	18	85	90	6

IES 10457

BOE-C6-0043185

ing Lawson Associates
Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 40711

Name/Location: BOEING

Project Manager: JIM VAN DER WATER

Recorder: (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr Wk Seq	DATE: Yr Mo Dy Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA - 8260
23	X							2		980922 0700	MW-21							X
23	X							2		980922 1015	TMW-9							X
23	X							2		980922 1105	TMW-6							X
23	X							2		980922 1145	TMW-1							X
23	X							2		980922 1210	TMW-4							X
23	X							2		980922 1245	TMW-5							X
23	X							2		980922 1250	TMW-22							X
23	X							2		980922 1320	TMW-7							X
23	X							2		980922 1355	TMW-3							X
23	X							2		980922 1430	TMW-8							X

LAB NUMBER: Yr Wk Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
				NORMAL T.A.T.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
9-23-98 1648		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) M. Van Beaver	DATE/TIME 9-23-98 16:48

METHOD OF SHIPMENT

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

6533

BOE-C6-0043186

PAGE 2 OF 2

HLA
[illegible]ng Lawson Associates
30 Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Job Number: 40711
Name/Location: BOEING
Project Manager: JIM VAN DER WATER

Samplers: MIKE PALMER
Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA 8260
23	X							2				98	09	23	0805	TMW-2							X
23	X							2				98	09	23	1025	WCC-9S							X
23	X							2				98	09	23	1130	WCC-12S							X
23	X							2				98	09	23	1235	WCC-6S							X
23	X							2				98	09	23	1405	WCC-3S							X
	X							2				98	09			TRIP BLANK							X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 9-23-98 1648		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) [signature] 9-23-98	DATE/TIME 16:40

METHOD OF SHIPMENT

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6533

BOE-C6-0043187

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print) : Mark Noorani

Client: Harding Lawson

Project No.: 40711

Project Name: Boeing

Laboratory Reference: IES 10473

Analytical Method: 8260

Date Sampled: 09/28/98
Date Received: 09/29/98
Date Reported: 10/06/98

Sample Matrix: Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

METHOD ID	LIMIT1 SOIL	LIMIT1 WATER	LAB CAS ID	PF CODE	SURROG FLG	Units	LAB CHEM								
							SAMP TYPE	W	W	W	W	W	W	W	W
							RES CODE	BT11	BF11	PP01	PP01	PP01	PP01	PP01	PP01
							SAMP ID	TRIP BLANK	EQUIP BLANK	Duplicate	WCC-3D	WCC-4S	WCC-5S	WCC-7S	WCC-11S
							SAMP DATE	09/28/98	09/28/98	09/28/98	09/28/98	09/28/98	09/28/98	09/28/98	09/28/98
							SAMP TIME		10:10	9:00	11:55	17:08	15:25	16:25	14:30
							SAMP DEPTH								
							PRESERVED	, N, H	, N, H	, N, H	, N, H	, N, H	, N, H	, N, H	, N, H
							ICED	Y	Y	Y	Y	Y	Y	Y	Y
							RECEIVED	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98
							REC TIME	8:12	8:12	8:12	8:12	8:12	8:12	8:12	8:12
							BASIS	W	W	W	W	W	W	W	W
								98090253	98090254	98090260	98090255	98090256	98090257	98090258	98090259
							Tested								
418.1	8.0	0.5		T		ppm	Extractable Hydrocarbons								
							Tested								
6010	5.0	0.5		T		ppm	Antimony								
6010	1.0	0.1		T		ppm	Arsenic								
6010	0.1	0.01		T		ppm	Barium								
6010	0.1	0.01		T		ppm	Beryllium								
6010	0.1	0.01		T		ppm	Cadmium								
							Tested								
7196	0.5	0.01		T		ppm	Chromium (VI)								
							Tested								
6010	0.1	0.01		T		ppm	Chromium Total								
6010	0.5	0.1		T		ppm	Cobalt								
6010	0.1	0.01		T		ppm	Copper								
6010	1.0	0.1		T		ppm	Lead								
							Tested								
7471	0.01	0.002		T		ppm	Mercury								
							Tested								
6010	0.5	0.1		T		ppm	Molybdenum								
6010	0.5	0.1		T		ppm	Nickel								
6010	1.0	0.1		T		ppm	Selenium								
6010	0.1	0.1		T		ppm	Silver								
6010	5.0	0.5		T		ppm	Thallium								
6010	0.5	0.1		T		ppm	Vanadium								
6010	0.1	0.01		T		ppm	Zinc								
							Tested								
STLC		5.0		S		ppm	Antimony								
		1.0		S		ppm	Arsenic								
		0.1		S		ppm	Barium								
		0.1		S		ppm	Beryllium								
		0.1		S		ppm	Cadmium								
		0.5		S		ppm	Chromium (VI)								
		0.1		S		ppm	Chromium Total								
		0.5		S		ppm	Cobalt								
		0.1		S		ppm	Copper								

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		1.0		S		ppm	Lead								
		0.01		S		ppm	Mercury								
		0.5		S		ppm	Molybdenum								
		0.5		S		ppm	Nickel								
		1.0		S		ppm	Selenium								
		0.1		S		ppm	Silver								
		5.0		S		ppm	Thallium								
		0.5		S		ppm	Vanadium								
		0.1		S		ppm	Zinc								
							Tested								
TCLP		5.0		C		ppm	Antimony								
		1.0		C		ppm	Arsenic								
		0.1		C		ppm	Barium								
		0.1		C		ppm	Beryllium								
		0.1		C		ppm	Cadmium								
		0.5		C		ppm	Chromium (VI)								
		0.1		C		ppm	Chromium Total								
		0.5		C		ppm	Cobalt								
		0.1		C		ppm	Copper								
		1.0		C		ppm	Lead								
		0.01		C		ppm	Mercury								
		0.5		C		ppm	Molybdenum								
		0.5		C		ppm	Nickel								
		1.0		C		ppm	Selenium								
		0.1		C		ppm	Silver								
		5.0		C		ppm	Thallium								
		0.5		C		ppm	Vanadium								
		0.1		C		ppm	Zinc								
							Tested	10/02/98	10/02/98	10/02/98	10/02/98	10/02/98	10/02/98	10/02/98	10/02/98
							Dilution Factor	1	1	10	10	5	1	2.5	2
8260	2.5	0.5	71-43-2	T		ppb	Benzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-27-4	T		ppb	Bromodichloromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-25-2	T		ppb	Bromoform	<	<	<	<	<	<	<	<
8260	2.5	1.0	74-83-9	T		ppb	Bromomethane	<	<	<	<	<	<	<	<
8260	5.0	0.5	75-15-0	T		ppb	Carbon Disulfide	<	<	<	<	<	<	<	<
8260	2.5	0.5	56-23-5	T		ppb	Carbon tetrachloride	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-90-7	T		ppb	Chlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	124-48-1	T		ppb	Chlorodibromomethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-00-3	T		ppb	Chloroethane	<	<	<	<	<	<	<	<
8260	5.0	0.5	110-75-8	T		ppb	2-Chloroethyl vinyl ether	<	<	<	<	<	<	<	<
8260	2.5	0.5	67-66-3	T		ppb	Chloroform	<	<	<	<	5.4	<	<	<
8260	2.5	0.5	74-87-3	T		ppb	Chloromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-34-3	T		ppb	1,1-Dichloroethane	<	<	<	<	24	<	1.4	<
8260	2.5	0.5	107-06-2	T		ppb	1,2-Dichloroethane	<	<	<	<	14	<	<	<
8260	2.5	0.5	75-35-4	T		ppb	1,1-Dichloroethene	<	<	1,200	1,200	890	17	300	51
8260	2.5	0.5	156-60-5	T		ppb	Trans 1,2-Dichloroethene	<	<	6.5	6.1	8.0	<	<	<
8260	2.5	0.5	78-87-5	T		ppb	1,2-Dichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	10061-01-5	T		ppb	cis-1,3-Dichloropropene	<	<	<	<	<	<	<	<
8260	2.5	0.5	10061-02-8	T		ppb	trans-1,3-Dichloropropene	<	<	<	<	<	<	<	<
8260	2.5	0.5	100-41-4	T		ppb	Ethylbenzene	<	<	<	<	<	<	<	<

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8260	5.0	2.5	75-09-2	T		ppb	Methylene chloride	<	<	<	<	<	<	<	<
8260	2.5	0.5	100-42-5	T		ppb	Styrene	<	<	<	<	<	<	<	<
8260	2.5	0.5	79-34-5	T		ppb	1,1,2,2-Tetrachloroethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	127-18-4	T		ppb	Tetrachloroethene	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-88-3	T		ppb	Toluene	<	<	63	58	<	<	<	<
8260	2.5	0.5	71-55-6	T		ppb	1,1,1-Trichloroethane	<	<	1,300	1,300	<	1.6	<	2.1
8260	2.5	0.5	79-00-5	T		ppb	1,1,2-Trichloroethane	<	<	<	<	18	<	1.7	<
8260	2.5	0.5	79-01-6	T		ppb	Trichloroethene	<	<	63	62	780	4.5	250	230
8260	5.0	0.5	75-69-4	T		ppb	Trichlorofluoromethane	<	<	<	<	<	<	<	<
8260	5.0	1.0	108-05-4	T		ppb	Vinyl acetate	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-01-4	T		ppb	Vinyl chloride	<	<	<	<	<	<	<	<
8260	2.5	1.0	1330-20-7	T		ppb	Total Xylenes	<	<	<	<	<	<	<	<
8260	2.5	0.5	75-71-8	T		ppb	Dichlorodifluoromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	156-59-2	T		ppb	cis-1-2,-Dichloroethene	<	<	18	18	12	<	<	<
8260	2.5	0.5	594-20-7	T		ppb	2,2-Dichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	74-97-5	T		ppb	Bromochloromethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	563-58-6	T		ppb	1,1-Dichloropropene	<	<	<	<	<	<	<	<
8260	2.5	0.5	74-95-3	T		ppb	Dibromomethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	106-93-4	T		ppb	1,2-Dibromoethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	142-28-9	T		ppb	1,3-Dichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	98-82-8	T		ppb	Isopropylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	79-34-5	T		ppb	1,1,2,2-Tetrachloroethane	<	<	<	<	<	<	<	<
8260	2.5	0.5	96-18-4	T		ppb	1,2,3-Trichloropropane	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-86-1	T		ppb	Bromobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	103-65-1	T		ppb	n-Propylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	95-49-8	T		ppb	2-Chlorotoluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	108-67-8	T		ppb	1,3,5-Trimethylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	106-43-4	T		ppb	4-Chlorotoluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	98-06-6	T		ppb	tert-Butylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	95-63-6	T		ppb	1,2,4-Trimethylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	135-98-8	T		ppb	sec-Butylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	99-87-6	T		ppb	4-Isopropyltoluene	<	<	<	<	<	<	<	<
8260	2.5	0.5	541-73-1	T		ppb	1,3-Dichlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	106-46-7	T		ppb	1,4-Dichlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	104-51-8	T		ppb	n-Butylbenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	95-50-1	T		ppb	1,2-Dichlorobenzene	<	<	<	<	<	<	<	<
8260	5.0	1.0	96-12-8	T		ppb	1,2-Dibromo-3-CPA	<	<	<	<	<	<	<	<
8260	2.5	0.5	120-82-1	T		ppb	1,2,4-Trichlorobenzene	<	<	<	<	<	<	<	<
8260	2.5	0.5	87-68-3	T		ppb	Hexachlorobutadiene	<	<	<	<	<	<	<	<
8260	2.5	0.5	91-20-3	T		ppb	Naphthalene	<	<	<	<	<	<	<	<
8260	2.5	0.5	87-61-6	T		ppb	1,2,3-Trichlorobenzene	<	<	<	<	<	<	<	<
					T	%	Dibromofluoromethane	91	92	103	99	106	95	95	94
					T	%	Toluene-d8	95	97	95	95	93	96	98	98
					T	%	4-Bromofluorobenzene	95	96	97	96	99	96	96	98
							Tested								
							Dilution Factor								
8270	100	5.0	83-32-9	T		ppb	Acenaphthene								
8270	100	5.0	208-96-8	T		ppb	Acenaphthylene								
8270	100	5.0	62-53-3	T		ppb	Aniline								
8270	100	5.0	120-12-7	T		ppb	Anthracene								
8270	500	50	65-65-0	T		ppb	Benzoic Acid								

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8270	100	5.0	56-55-3	T		ppb	Benzo (a) anthracene
8270	250	25	205-99-2	T		ppb	Benzo (b) fluoranthene
8270	250	25	207-08-9	T		ppb	Benzo (k) fluoranthene
8270	250	25	191-24-2	T		ppb	Benzo (g,h,i)perylene
8270	250	25	50-32-8	T		ppb	Benzo (a) pyrene
8270	100	50	100-51-6	T		ppb	Benzyl alcohol
8270	100	5.0	111-91-1	T		ppb	Bis(2-chloroethoxy)methane
8270	100	5.0	111-44-4	T		ppb	Bis(2-chloroethyl)ether
8270	100	5.0	108-60-1	T		ppb	Bis(2-chloroisopropyl)ether
8270	100	3.0	117-81-7	T		ppb	Bis(2-ethylhexyl)phthalate
8270	100	5.0	101-55-3	T		ppb	4-Bromophenyl phenyl ether
8270	100	5.0	85-68-7	T		ppb	Butyl benzyl phthalate
8270	100	5.0	106-47-8	T		ppb	4-Chloroaniline
8270	100	5.0	91-58-7	T		ppb	2-Chloronaphthalene
8270	100	5.0	59-50-7	T		ppb	4-Chloro-3-methylphenol
8270	100	5.0	95-57-8	T		ppb	2-Chlorophenol
8270	100	5.0	7005-72-3	T		ppb	4-Chlorophenyl phenyl ether
8270	100	5.0	218-01-9	T		ppb	Chrysene
8270	100	25	53-70-3	T		ppb	Dibenz(a,h)anthracene
8270	100	5.0	132-64-9	T		ppb	Dibenzofuran
8270	250	5.0	84-74-2	T		ppb	Di-N-butyl phthalate
8270	100	5.0	541-73-1	T		ppb	1,3-Dichlorobenzene
8270	100	5.0	106-46-7	T		ppb	1,4-Dichlorobenzene
8270	100	5.0	95-50-1	T		ppb	1,2-Dichlorobenzene
8270	100	5.0	91-94-1	T		ppb	3,3-Dichlorobenzidine
8270	100	5.0	120-83-2	T		ppb	2,4-Dichlorophenol
8270	100	5.0	84-66-2	T		ppb	Diethyl phthalate
8270	100	5.0	105-67-9	T		ppb	2,4-Dimethylphenol
8270	100	5.0	131-11-3	T		ppb	Dimethyl phthalate
8270	100	50	534-52-1	T		ppb	4,6-Dinitro-2-methylphenol
8270	100	50	51-28-5	T		ppb	2,4-Dinitrophenol
8270	250	5.0	121-14-2	T		ppb	2,4-Dinitrotoluene
8270	250	5.0	606-20-2	T		ppb	2,6-Dinitrotoluene
8270	250	25	117-84-0	T		ppb	Di-N-octyl phthalate
8270	100	5.0	206-44-0	T		ppb	Fluoranthene
8270	100	5.0	86-73-7	T		ppb	Fluorene
8270	100	5.0	118-74-1	T		ppb	Hexachlorobenzene
8270	100	5.0	87-68-3	T		ppb	Hexachlorobutadiene
8270	100	5.0	77-47-4	T		ppb	Hexachlorocyclopentadiene
8270	100	5.0	67-72-1	T		ppb	Hexachloroethane
8270	250	25	193-39-5	T		ppb	Indeno(1,2,3-cd)pyrene
8270	100	5.0	78-59-1	T		ppb	Isophorone
8270	100	5.0	91-57-6	T		ppb	2-Methylnaphthalene
8270	100	5.0	95-48-7	T		ppb	2-Methylphenol
8270	100	5.0	106-44-5	T		ppb	4-Methylphenol
8270	100	5.0	91-20-3	T		ppb	Naphthalene
8270	250	50	88-74-4	T		ppb	2-Nitroaniline
8270	250	50	99-09-2	T		ppb	3-Nitroaniline
8270	250	50	100-01-6	T		ppb	4-Nitroaniline
8270	100	5.0	98-95-3	T		ppb	Nitrobenzene
8270	100	5.0	88-75-5	T		ppb	2-Nitrophenol
8270	100	50	100-02-7	T		ppb	4-Nitrophenol
8270	100	5.0	86-30-6	T		ppb	N-Nitrosodiphenylamine

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8270	100	5.0	621-64-7	T		ppb	N-Nitroso-di-N-propylamine										
8270	100	5.0	62-75-9	T		ppb	N-Nitrosodimethylamine										
8270	250	50	87-86-5	T		ppb	Pentachlorophenol										
8270	100	5.0	85-01-8	T		ppb	Phenanthrene										
8270	100	5.0	108-95-2	T		ppb	Phenol										
8270	100	5.0	129-00-0	T		ppb	Pyrene										
8270	100	5.0	120-82-1	T		ppb	1,2,4-Trichlorobenzene										
8270	100	5.0	95-95-4	T		ppb	2,4,5-Trichlorophenol										
8270	100	5.0	88-06-2	T		ppb	2,4,6-Trichlorophenol										
							Tested										
							Dilution Factor										
8080	20	5.0	12674-11-2	T		ppb	PCB-1016										
8080	20	5.0	11104-28-2	T		ppb	PCB-1221										
8080	20	5.0	11141-16-5	T		ppb	PCB-1232										
8080	20	5.0	53469-21-9	T		ppb	PCB-1242										
8080	20	5.0	12672-29-6	T		ppb	PCB-1248										
8080	20	5.0	11097-69-1	T		ppb	PCB-1254										
8080	20	5.0	11096-82-5	T		ppb	PCB-1260										
							Tested										
							Dilution Factor										
8080	1.0	0.1	309-00-2	T		ppb	Aldrin										
8080	1.0	0.2	319-84-8	T		ppb	alpha-BHC										
8080	1.0	0.2	319-85-7	T		ppb	beta-BHC										
8080	2.0	0.2	319-86-8	T		ppb	gamma-BHC										
8080	1.0	0.2	58-89-9	T		ppb	gamma-BHC (Lindane)										
8080	10	0.2	57-74-9	T		ppb	Chlordane										
8080	2.0	0.5	72-54-8	T		ppb	4,4'-DDD										
8080	5.0	0.1	72-55-9	T		ppb	4,4'-DDE										
8080	1.0	0.1	50-29-3	T		ppb	4,4'-DDT										
8080	2.0	0.5	60-57-1	T		ppb	Dieldrin										
8080	1.0	0.5	959-98-8	T		ppb	Endosulfan I										
8080	2.0	0.5	33213-65-9	T		ppb	Endosulfan II										
8080	10	0.5	1031-07-8	T		ppb	Endosulfan sulfate										
8080	2.0	0.02	72-20-8	T		ppb	Endrin										
8080	2.0	0.2	7421-93-4	T		ppb	Endrin aldehyde										
8080	1.0	0.1	76-44-8	T		ppb	Heptachlor										
8080	1.0	0.2	1024-57-3	T		ppb	Heptachlor epoxide										
8080	30	9.0	72-43-5	T		ppb	Methoxychlor										
8080	35	0.5	8001-35-2	T		ppb	Toxaphene										
							Tested										
8015m				T		ppm	Up to & Including C-12										
8015m				T		ppm	C13-22										
8015m				T		ppm	C23 & Higher										
8015m	8.0	0.5		T		ppm	Total										
							Tested										
8015m	8.0	0.5		T		ppm	Diesel										
							Tested										
8015m	5.0	0.05		T		ppm	Gas										

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9060	5.0	1.0		T		ppm	***Tested*** TOC									
9010	0.40	0.020		T		ppm	***Tested*** Cyanide									

(a) QC units for Method 8270 are reported in ng.

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QC(W)

LAB SAMP NO.	R1	T CONC	SL[a]	DL[a]	RECOVER	D RECOVER	RPD

10/02/98 1 98090253	0.0	20	19	20	95	100	5
98090253	0.0	20	19	21	95	105	10
98090253	0.0	20	19	21	95	105	10

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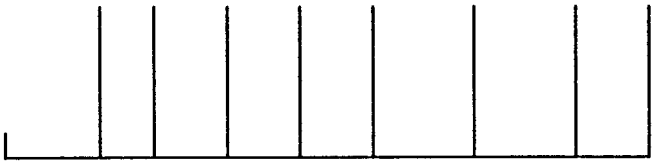
98090253	0.0	20	19	20	95	100	5
98090253	0.0	20	19	20	95	100	5

BOE-C6-0043197

BOE-C6-0043198

BOE-C6-0043199



BOE-C6-0043200

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98090253
Laboratory Reference #: IES 10473

Sampled: 09/28/98
Received: 09/29/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98090253
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	91
Toluene-d8	95
4-Bromofluorobenzene	95

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sampled: 09/28/98
Received: 09/29/98
Analyzed: 10/02/98
Reported: 10/06/98

Sample Description: Water, Equip Blank
Laboratory Sample Number: 98090254
Laboratory Reference #: IES 10473

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water , Equip Blank
Laboratory Sample Number: 98090254
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	92
Toluene-d8	97
4-Bromofluorobenzene	96

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, WCC-3D
Laboratory Sample Number: 98090255
Laboratory Reference #: IES 10473

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	5.0	N.D.
Bromodichloromethane	75-27-4	5.0	N.D.
Bromoform	75-25-2	5.0	N.D.
Bromomethane	74-83-9	10	N.D.
Carbon Disulfide	75-15-0	5.0	N.D.
Carbon tetrachloride	56-23-5	5.0	N.D.
Chlorobenzene	108-90-7	5.0	N.D.
Chlorodibromomethane	124-48-1	5.0	N.D.
Chloroethane	75-00-3	5.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	5.0	N.D.
Chloroform	67-66-3	5.0	N.D.
Chloromethane	74-87-3	5.0	N.D.
1,1-Dichloroethane	75-34-3	5.0	N.D.
1,2-Dichloroethane	107-06-2	5.0	N.D.
1,1-Dichloroethene	75-35-4	5.0	1,200
Trans 1,2-Dichloroethene	156-60-5	5.0	6.1
1,2-Dichloropropane	78-87-5	5.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	5.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	5.0	N.D.
Ethylbenzene	100-41-4	5.0	N.D.
Methylene chloride	75-09-2	25	N.D.
Styrene	100-42-5	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
Tetrachloroethene	127-18-4	5.0	N.D.
Toluene	108-88-3	5.0	58
1,1,1-Trichloroethane	71-55-6	5.0	1,300
1,1,2-Trichloroethane	79-00-5	5.0	N.D.
Trichloroethene	79-01-6	5.0	62
Trichlorofluoromethane	75-69-4	5.0	N.D.
Vinyl acetate	108-05-4	10	N.D.
Vinyl chloride	75-01-4	5.0	N.D.
Total Xylenes	1330-20-7	10	N.D.
Dichlorodifluoromethane	75-71-8	5.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	5.0	18
2,2-Dichloropropane	594-20-7	5.0	N.D.
Bromochloromethane	74-97-5	5.0	N.D.
1,1-Dichloropropene	563-58-6	5.0	N.D.
Dibromomethane	74-95-3	5.0	N.D.
1,2-Dibromoethane	106-93-4	5.0	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-3D
Laboratory Sample Number: 98090255
Laboratory Reference #: IES 10473

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
1,3-Dichloropropane	142-28-9	5.0	N.D.
Isopropylbenzene	98-82-8	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
1,2,3-Trichloropropane	96-18-4	5.0	N.D.
Bromobenzene	108-86-1	5.0	N.D.
n-Propylbenzene	103-65-1	5.0	N.D.
2-Chlorotoluene	95-49-8	5.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	5.0	N.D.
4-Chlorotoluene	106-43-4	5.0	N.D.
tert-Butylbenzene	98-06-6	5.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	5.0	N.D.
sec-Butylbenzene	135-98-8	5.0	N.D.
4-Isopropyltoluene	99-87-6	5.0	N.D.
1,3-Dichlorobenzene	541-73-1	5.0	N.D.
1,4-Dichlorobenzene	106-46-7	5.0	N.D.
n-Butylbenzene	104-51-8	5.0	N.D.
1,2-Dichlorobenzene	95-50-1	5.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	5.0	N.D.
Hexachlorobutadiene	87-68-3	5.0	N.D.
Naphthalene	91-20-3	5.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	99
Toluene-d8	95
4-Bromofluorobenzene	96

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water , WCC-4S
Laboratory Sample Number: 98090256
Laboratory Reference #: IES 10473

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	5.4
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	24
1,2-Dichloroethane	107-06-2	2.5	14
1,1-Dichloroethene	75-35-4	2.5	890
Trans 1,2-Dichloroethene	156-60-5	2.5	8.0
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	N.D.
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	18
Trichloroethene	79-01-6	2.5	780
Trichlorofluoromethane	75-69-4	2.5	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	12
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water , WCC-4S
Laboratory Sample Number: 98090256
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	106
Toluene-d8	93
4-Bromofluorobenzene	99

ORANGE COAST ANALYTICAL, INC.
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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water , WCC-5S
Laboratory Sample Number: 98090257
Laboratory Reference #: IES 10473

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	17
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	1.6
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	4.5
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-5S
Laboratory Sample Number: 98090257
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	95
Toluene-d8	96
4-Bromofluorobenzene	96

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water , WCC-7S
Laboratory Sample Number: 98090258
Laboratory Reference #: IES 10473

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	1.3	N.D.
Bromodichloromethane	75-27-4	1.3	N.D.
Bromoform	75-25-2	1.3	N.D.
Bromomethane	74-83-9	2.5	N.D.
Carbon Disulfide	75-15-0	1.3	N.D.
Carbon tetrachloride	56-23-5	1.3	N.D.
Chlorobenzene	108-90-7	1.3	N.D.
Chlorodibromomethane	124-48-1	1.3	N.D.
Chloroethane	75-00-3	1.3	N.D.
2-Chloroethyl vinyl ether	110-75-8	1.3	N.D.
Chloroform	67-66-3	1.3	N.D.
Chloromethane	74-87-3	1.3	N.D.
1,1-Dichloroethane	75-34-3	1.3	1.4
1,2-Dichloroethane	107-06-2	1.3	N.D.
1,1-Dichloroethene	75-35-4	1.3	300
Trans 1,2-Dichloroethene	156-60-5	1.3	N.D.
1,2-Dichloropropane	78-87-5	1.3	N.D.
cis-1,3-Dichloropropene	10061-01-5	1.3	N.D.
trans-1,3-Dichloropropene	10061-02-6	1.3	N.D.
Ethylbenzene	100-41-4	1.3	N.D.
Methylene chloride	75-09-2	6.3	N.D.
Styrene	100-42-5	1.3	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.3	N.D.
Tetrachloroethene	127-18-4	1.3	N.D.
Toluene	108-88-3	1.3	N.D.
1,1,1-Trichloroethane	71-55-6	1.3	N.D.
1,1,2-Trichloroethane	79-00-5	1.3	1.7
Trichloroethene	79-01-6	1.3	250
Trichlorofluoromethane	75-69-4	1.3	N.D.
Vinyl acetate	108-05-4	2.5	N.D.
Vinyl chloride	75-01-4	1.3	N.D.
Total Xylenes	1330-20-7	2.5	N.D.
Dichlorodifluoromethane	75-71-8	1.3	N.D.
cis-1-2,-Dichloroethene	156-59-2	1.3	N.D.
2,2-Dichloropropane	594-20-7	1.3	N.D.
Bromochloromethane	74-97-5	1.3	N.D.
1,1-Dichloropropene	563-58-6	1.3	N.D.
Dibromomethane	74-95-3	1.3	N.D.
1,2-Dibromoethane	106-93-4	1.3	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-7S
Laboratory Sample Number: 98090258
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	1.3	N.D.
Isopropylbenzene	98-82-8	1.3	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.3	N.D.
1,2,3-Trichloropropane	96-18-4	1.3	N.D.
Bromobenzene	108-86-1	1.3	N.D.
n-Propylbenzene	103-65-1	1.3	N.D.
2-Chlorotoluene	95-49-8	1.3	N.D.
1,3,5-Trimethylbenzene	108-67-8	1.3	N.D.
4-Chlorotoluene	106-43-4	1.3	N.D.
tert-Butylbenzene	98-06-6	1.3	N.D.
1,2,4-Trimethylbenzene	95-63-6	1.3	N.D.
sec-Butylbenzene	135-98-8	1.3	N.D.
4-Isopropyltoluene	99-87-6	1.3	N.D.
1,3-Dichlorobenzene	541-73-1	1.3	N.D.
1,4-Dichlorobenzene	106-46-7	1.3	N.D.
n-Butylbenzene	104-51-8	1.3	N.D.
1,2-Dichlorobenzene	95-50-1	1.3	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.3	N.D.
1,2,4-Trichlorobenzene	120-82-1	1.3	N.D.
Hexachlorobutadiene	87-68-3	1.3	N.D.
Naphthalene	91-20-3	1.3	N.D.
1,2,3-Trichlorobenzene	87-61-6	1.3	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	95
Toluene-d8	96
4-Bromofluorobenzene	96

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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, WCC-11S
Laboratory Sample Number: 98090259
Laboratory Reference #: IES 10473

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	1.0	N.D.
Bromodichloromethane	75-27-4	1.0	N.D.
Bromoform	75-25-2	1.0	N.D.
Bromomethane	74-83-9	2.0	N.D.
Carbon Disulfide	75-15-0	1.0	N.D.
Carbon tetrachloride	56-23-5	1.0	N.D.
Chlorobenzene	108-90-7	1.0	N.D.
Chlorodibromomethane	124-48-1	1.0	N.D.
Chloroethane	75-00-3	1.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	1.0	N.D.
Chloroform	67-66-3	1.0	N.D.
Chloromethane	74-87-3	1.0	N.D.
1,1-Dichloroethane	75-34-3	1.0	N.D.
1,2-Dichloroethane	107-06-2	1.0	N.D.
1,1-Dichloroethene	75-35-4	1.0	51
Trans 1,2-Dichloroethene	156-60-5	1.0	N.D.
1,2-Dichloropropane	78-87-5	1.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	1.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	1.0	N.D.
Ethylbenzene	100-41-4	1.0	N.D.
Methylene chloride	75-09-2	5.0	N.D.
Styrene	100-42-5	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
Tetrachloroethene	127-18-4	1.0	N.D.
Toluene	108-88-3	1.0	N.D.
1,1,1-Trichloroethane	71-55-6	1.0	2.1
1,1,2-Trichloroethane	79-00-5	1.0	N.D.
Trichloroethene	79-01-6	1.0	230
Trichlorofluoromethane	75-69-4	1.0	N.D.
Vinyl acetate	108-05-4	2.0	N.D.
Vinyl chloride	75-01-4	1.0	N.D.
Total Xylenes	1330-20-7	2.0	N.D.
Dichlorodifluoromethane	75-71-8	1.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	1.0	N.D.
2,2-Dichloropropane	594-20-7	1.0	N.D.
Bromochloromethane	74-97-5	1.0	N.D.
1,1-Dichloropropene	563-58-6	1.0	N.D.
Dibromomethane	74-95-3	1.0	N.D.
1,2-Dibromoethane	106-93-4	1.0	N.D.

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-11S
Laboratory Sample Number: 98090259
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	1.0	N.D.
Isopropylbenzene	98-82-8	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
1,2,3-Trichloropropane	96-18-4	1.0	N.D.
Bromobenzene	108-86-1	1.0	N.D.
n-Propylbenzene	103-65-1	1.0	N.D.
2-Chlorotoluene	95-49-8	1.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	1.0	N.D.
4-Chlorotoluene	106-43-4	1.0	N.D.
tert-Butylbenzene	98-06-6	1.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	1.0	N.D.
sec-Butylbenzene	135-98-8	1.0	N.D.
4-Isopropyltoluene	99-87-6	1.0	N.D.
1,3-Dichlorobenzene	541-73-1	1.0	N.D.
1,4-Dichlorobenzene	106-46-7	1.0	N.D.
n-Butylbenzene	104-51-8	1.0	N.D.
1,2-Dichlorobenzene	95-50-1	1.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	1.0	N.D.
Hexachlorobutadiene	87-68-3	1.0	N.D.
Naphthalene	91-20-3	1.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	94
Toluene-d8	98
4-Bromofluorobenzene	98

ORANGE COAST ANALYTICAL, INC.
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Harding Lawson Associates
ATTN: Mr. Jim Van De Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 40711

Sample Description: Water, Duplicate
Laboratory Sample Number: 98090260
Laboratory Reference #: IES 10473

Sampled: 09/22/98
Received: 09/23/98
Analyzed: 10/02/98
Reported: 10/06/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	5.0	N.D.
Bromodichloromethane	75-27-4	5.0	N.D.
Bromoform	75-25-2	5.0	N.D.
Bromomethane	74-83-9	10.0	N.D.
Carbon Disulfide	75-15-0	5.0	N.D.
Carbon tetrachloride	56-23-5	5.0	N.D.
Chlorobenzene	108-90-7	5.0	N.D.
Chlorodibromomethane	124-48-1	5.0	N.D.
Chloroethane	75-00-3	5.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	5.0	N.D.
Chloroform	67-66-3	5.0	N.D.
Chloromethane	74-87-3	5.0	N.D.
1,1-Dichloroethane	75-34-3	5.0	N.D.
1,2-Dichloroethane	107-06-2	5.0	N.D.
1,1-Dichloroethene	75-35-4	5.0	1,200
Trans 1,2-Dichloroethene	156-60-5	5.0	6.5
1,2-Dichloropropane	78-87-5	5.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	5.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	5.0	N.D.
Ethylbenzene	100-41-4	5.0	N.D.
Methylene chloride	75-09-2	25.0	N.D.
Styrene	100-42-5	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
Tetrachloroethene	127-18-4	5.0	N.D.
Toluene	108-88-3	5.0	63
1,1,1-Trichloroethane	71-55-6	5.0	1,300
1,1,2-Trichloroethane	79-00-5	5.0	N.D.
Trichloroethene	79-01-6	5.0	63
Trichlorofluoromethane	75-69-4	5.0	N.D.
Vinyl acetate	108-05-4	10.0	N.D.
Vinyl chloride	75-01-4	5.0	N.D.
Total Xylenes	1330-20-7	10.0	N.D.
Dichlorodifluoromethane	75-71-8	5.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	5.0	18
2,2-Dichloropropane	594-20-7	5.0	N.D.
Bromochloromethane	74-97-5	5.0	N.D.
1,1-Dichloropropene	563-58-6	5.0	N.D.
Dibromomethane	74-95-3	5.0	N.D.
1,2-Dibromoethane	106-93-4	5.0	N.D.

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VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Duplicate
Laboratory Sample Number: 98090260
Laboratory Reference #: IES 10473

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	5.0	N.D.
Isopropylbenzene	98-82-8	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
1,2,3-Trichloropropane	96-18-4	5.0	N.D.
Bromobenzene	108-86-1	5.0	N.D.
n-Propylbenzene	103-65-1	5.0	N.D.
2-Chlorotoluene	95-49-8	5.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	5.0	N.D.
4-Chlorotoluene	106-43-4	5.0	N.D.
tert-Butylbenzene	98-06-6	5.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	5.0	N.D.
sec-Butylbenzene	135-98-8	5.0	N.D.
4-Isopropyltoluene	99-87-6	5.0	N.D.
1,3-Dichlorobenzene	541-73-1	5.0	N.D.
1,4-Dichlorobenzene	106-46-7	5.0	N.D.
n-Butylbenzene	104-51-8	5.0	N.D.
1,2-Dichlorobenzene	95-50-1	5.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	5.0	N.D.
Hexachlorobutadiene	87-68-3	5.0	N.D.
Naphthalene	91-20-3	5.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	103
Toluene-d8	95
4-Bromofluorobenzene	97

ORANGE COAST ANALYTICAL, INC.
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QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis :10/02/98
Laboratory Sample No : 98090253
Laboratory Reference No : IES 10473

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	20	19	20	95	100	5
1,1-Dichloroethene	0.0	20	19	21	95	105	10
Trichloroethene	0.0	20	19	20	95	100	5
Toluene	0.0	20	19	20	95	100	5
Chlorobenzene	0.0	20	19	21	95	105	10

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

ding Lawson Associates
Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: Orange coast

Samplers: JWH

Job Number: 40711

Name/Location: Boeing / Torrance

Project Manager: Jim Van Der Water

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA 8260
10	X							2				98	09	28	—	Trip Blank							X
10	X							2							1010	Equipment Blank							X
23	X							2							0900	Duplicate							X
23	X							2							1155	WCC-3D							X
23	X							2							1708	WCC-4S							X
23	X							2							1525	WCC-5S							X
23	X							2							1625	WCC-7S							X
23	X							2							1430	WCC-11S							X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Hold Duplicate and equipment Blank Call Nick Hagen for additional information 260-1800
						Normal TAT

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 9-29-98 0815		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) [signature] 9-29-98	DATE/TIME 8:12

METHOD OF SHIPMENT

6533

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

BOE-C6-0043218

ORANGE COAST ANALYTICAL, INC.
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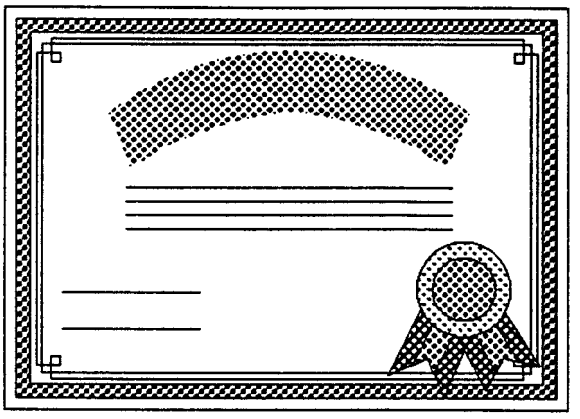

ORANGE COAST ANALYTICAL THANKS YOU FOR YOUR BUSINESS

THE FOLLOWING PAGES ARE THE ANALYSIS REPORT

ON THE SAMPLES YOU REQUESTED.

IF YOU HAVE ANY QUESTIONS REGARDING THIS REPORT

PLEASE FEEL FREE TO CONTACT US.

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification (ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print) : Mark Noorani

Client: Harding Lawson

Project No.: 42455-1

Project Name: Boeing

Laboratory Reference: HLA 10507

Analytical Method: 8260, 6010A, 325.3, 353.3, 415.1

Date Sampled: 10/16,20,21/98
Date Received: 10/21/98
Date Reported: 10/27/98

Sample Matrix: Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/19/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-9
Laboratory Sample Number: 98100151
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	N.D.
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	N.D.
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	51
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	3.5
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	420
Trichlorofluoromethane	75-69-4	2.5	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	N.D.
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-9
Laboratory Sample Number: 98100151
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	95
Toluene-d8	95
4-Bromofluorobenzene	96

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/19/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-1
Laboratory Sample Number: 98100152
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	4.7
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	N.D.
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	670
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	N.D.
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	4.0
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	370
Trichlorofluoromethane	75-69-4	2.5	23
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	N.D.
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-1
Laboratory Sample Number: 98100152
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	97
Toluene-d8	95
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/19/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-6
Laboratory Sample Number: 98100153
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	500
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	N.D.
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	11
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	N.D.
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	210
Trichlorofluoromethane	75-69-4	2.5	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	N.D.
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-6
Laboratory Sample Number: 98100153
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	95
4-Bromofluorobenzene	96

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/19/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-5
Laboratory Sample Number: 98100154
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	25	N.D.
Bromodichloromethane	75-27-4	25	N.D.
Bromoform	75-25-2	25	N.D.
Bromomethane	74-83-9	50	N.D.
Carbon Disulfide	75-15-0	25	N.D.
Carbon tetrachloride	56-23-5	25	N.D.
Chlorobenzene	108-90-7	25	N.D.
Chlorodibromomethane	124-48-1	25	N.D.
Chloroethane	75-00-3	25	N.D.
2-Chloroethyl vinyl ether	110-75-8	25	N.D.
Chloroform	67-66-3	25	28
Chloromethane	74-87-3	25	N.D.
1,1-Dichloroethane	75-34-3	25	N.D.
1,2-Dichloroethane	107-06-2	25	N.D.
1,1-Dichloroethene	75-35-4	25	530
Trans 1,2-Dichloroethene	156-60-5	25	N.D.
1,2-Dichloropropane	78-87-5	25	N.D.
cis-1,3-Dichloropropene	10061-01-5	25	N.D.
trans-1,3-Dichloropropene	10061-02-6	25	N.D.
Ethylbenzene	100-41-4	25	N.D.
Methylene chloride	75-09-2	125	N.D.
Styrene	100-42-5	25	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	25	N.D.
Tetrachloroethene	127-18-4	25	N.D.
Toluene	108-88-3	25	N.D.
1,1,1-Trichloroethane	71-55-6	25	N.D.
1,1,2-Trichloroethane	79-00-5	25	N.D.
Trichloroethene	79-01-6	25	5,000
Trichlorofluoromethane	75-69-4	25	N.D.
Vinyl acetate	108-05-4	50	N.D.
Vinyl chloride	75-01-4	25	N.D.
Total Xylenes	1330-20-7	50	N.D.
Dichlorodifluoromethane	75-71-8	25	N.D.
cis-1-2,-Dichloroethene	156-59-2	25	N.D.
2,2-Dichloropropane	594-20-7	25	N.D.
Bromochloromethane	74-97-5	25	N.D.
1,1-Dichloropropene	563-58-6	25	N.D.
Dibromomethane	74-95-3	25	N.D.
1,2-Dibromoethane	106-93-4	25	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-5
Laboratory Sample Number: 98100154
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	25	N.D.
Isopropylbenzene	98-82-8	25	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	25	N.D.
1,2,3-Trichloropropane	96-18-4	25	N.D.
Bromobenzene	108-86-1	25	N.D.
n-Propylbenzene	103-65-1	25	N.D.
2-Chlorotoluene	95-49-8	25	N.D.
1,3,5-Trimethylbenzene	108-67-8	25	N.D.
4-Chlorotoluene	106-43-4	25	N.D.
tert-Butylbenzene	98-06-6	25	N.D.
1,2,4-Trimethylbenzene	95-63-6	25	N.D.
sec-Butylbenzene	135-98-8	25	N.D.
4-Isopropyltoluene	99-87-6	25	N.D.
1,3-Dichlorobenzene	541-73-1	25	N.D.
1,4-Dichlorobenzene	106-46-7	25	N.D.
n-Butylbenzene	104-51-8	25	N.D.
1,2-Dichlorobenzene	95-50-1	25	N.D.
1-2-Dibromo-3-CPA	96-12-8	25	N.D.
1,2,4-Trichlorobenzene	120-82-1	25	N.D.
Hexachlorobutadiene	87-68-3	25	N.D.
Naphthalene	91-20-3	25	N.D.
1,2,3-Trichlorobenzene	87-61-6	25	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	95
4-Bromofluorobenzene	97

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/19/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-70
Laboratory Sample Number: 98100155
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-70
Laboratory Sample Number: 98100155
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	99
Toluene-d8	95
4-Bromofluorobenzene	97

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/16/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98100156
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98100156
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	95
4-Bromofluorobenzene	97

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-7
Laboratory Sample Number: 98100157
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	23
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	14
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	44
1,2-Dichloroethane	107-06-2	10	28
1,1-Dichloroethene	75-35-4	10	2,400
Trans 1,2-Dichloroethene	156-60-5	10	65
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	N.D.
1,1,2-Trichloroethane	79-00-5	10	17
Trichloroethene	79-01-6	10	3,000
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	89
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-7
Laboratory Sample Number: 98100157
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	103
Toluene-d8	95
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-60
Laboratory Sample Number: 98100158
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	20
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	14
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	44
1,2-Dichloroethane	107-06-2	10	26
1,1-Dichloroethene	75-35-4	10	2,100
Trans 1,2-Dichloroethene	156-60-5	10	57
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	N.D.
1,1,2-Trichloroethane	79-00-5	10	17
Trichloroethene	79-01-6	10	2,800
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	83
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-60
Laboratory Sample Number: 98100158
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	103
Toluene-d8	93
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-4
Laboratory Sample Number: 98100159
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	10
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	20
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	56
1,2-Dichloroethane	107-06-2	10	36
1,1-Dichloroethene	75-35-4	10	2,400
Trans 1,2-Dichloroethene	156-60-5	10	73
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	22
1,1,2-Trichloroethane	79-00-5	10	29
Trichloroethene	79-01-6	10	2,900
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	98
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-4
Laboratory Sample Number: 98100159
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	106
Toluene-d8	95
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-8
Laboratory Sample Number: 98100160
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	13
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	N.D.
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	18
1,2-Dichloroethane	107-06-2	10	N.D.
1,1-Dichloroethene	75-35-4	10	1,300
Trans 1,2-Dichloroethene	156-60-5	10	25
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	N.D.
1,1,2-Trichloroethane	79-00-5	10	N.D.
Trichloroethene	79-01-6	10	2,100
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	32
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-8
Laboratory Sample Number: 98100160
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	101
Toluene-d8	96
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-3
Laboratory Sample Number: 98100161
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	50	N.D.
Bromodichloromethane	75-27-4	50	N.D.
Bromoform	75-25-2	50	N.D.
Bromomethane	74-83-9	100	N.D.
Carbon Disulfide	75-15-0	50	N.D.
Carbon tetrachloride	56-23-5	50	N.D.
Chlorobenzene	108-90-7	50	N.D.
Chlorodibromomethane	124-48-1	50	N.D.
Chloroethane	75-00-3	50	N.D.
2-Chloroethyl vinyl ether	110-75-8	50	N.D.
Chloroform	67-66-3	50	N.D.
Chloromethane	74-87-3	50	N.D.
1,1-Dichloroethane	75-34-3	50	N.D.
1,2-Dichloroethane	107-06-2	50	N.D.
1,1-Dichloroethene	75-35-4	50	330
Trans 1,2-Dichloroethene	156-60-5	50	N.D.
1,2-Dichloropropane	78-87-5	50	N.D.
cis-1,3-Dichloropropene	10061-01-5	50	N.D.
trans-1,3-Dichloropropene	10061-02-6	50	N.D.
Ethylbenzene	100-41-4	50	N.D.
Methylene chloride	75-09-2	250	N.D.
Styrene	100-42-5	50	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	50	N.D.
Tetrachloroethene	127-18-4	50	N.D.
Toluene	108-88-3	50	N.D.
1,1,1-Trichloroethane	71-55-6	50	N.D.
1,1,2-Trichloroethane	79-00-5	50	N.D.
Trichloroethene	79-01-6	50	9,900
Trichlorofluoromethane	75-69-4	50	N.D.
Vinyl acetate	108-05-4	100	N.D.
Vinyl chloride	75-01-4	50	N.D.
Total Xylenes	1330-20-7	100	N.D.
Dichlorodifluoromethane	75-71-8	50	N.D.
cis-1-2,-Dichloroethene	156-59-2	50	N.D.
2,2-Dichloropropane	594-20-7	50	N.D.
Bromochloromethane	74-97-5	50	N.D.
1,1-Dichloropropene	563-58-6	50	N.D.
Dibromomethane	74-95-3	50	N.D.
1,2-Dibromoethane	106-93-4	50	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-3
Laboratory Sample Number: 98100161
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	50	N.D.
Isopropylbenzene	98-82-8	50	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	50	N.D.
1,2,3-Trichloropropane	96-18-4	50	N.D.
Bromobenzene	108-86-1	50	N.D.
n-Propylbenzene	103-65-1	50	N.D.
2-Chlorotoluene	95-49-8	50	N.D.
1,3,5-Trimethylbenzene	108-67-8	50	N.D.
4-Chlorotoluene	106-43-4	50	N.D.
tert-Butylbenzene	98-06-6	50	N.D.
1,2,4-Trimethylbenzene	95-63-6	50	N.D.
sec-Butylbenzene	135-98-8	50	N.D.
4-Isopropyltoluene	99-87-6	50	N.D.
1,3-Dichlorobenzene	541-73-1	50	N.D.
1,4-Dichlorobenzene	106-46-7	50	N.D.
n-Butylbenzene	104-51-8	50	N.D.
1,2-Dichlorobenzene	95-50-1	50	N.D.
1-2-Dibromo-3-CPA	96-12-8	50	N.D.
1,2,4-Trichlorobenzene	120-82-1	50	N.D.
Hexachlorobutadiene	87-68-3	50	N.D.
Naphthalene	91-20-3	50	N.D.
1,2,3-Trichlorobenzene	87-61-6	50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	101
Toluene-d8	96
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, TMW-2
Laboratory Sample Number: 98100162
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	125	N.D.
Bromodichloromethane	75-27-4	125	N.D.
Bromoform	75-25-2	125	N.D.
Bromomethane	74-83-9	250	N.D.
Carbon Disulfide	75-15-0	125	N.D.
Carbon tetrachloride	56-23-5	125	N.D.
Chlorobenzene	108-90-7	125	N.D.
Chlorodibromomethane	124-48-1	125	N.D.
Chloroethane	75-00-3	125	N.D.
2-Chloroethyl vinyl ether	110-75-8	125	N.D.
Chloroform	67-66-3	125	270
Chloromethane	74-87-3	125	N.D.
1,1-Dichloroethane	75-34-3	125	1,600
1,2-Dichloroethane	107-06-2	125	N.D.
1,1-Dichloroethene	75-35-4	125	33,000
Trans 1,2-Dichloroethene	156-60-5	125	700
1,2-Dichloropropane	78-87-5	125	N.D.
cis-1,3-Dichloropropene	10061-01-5	125	N.D.
trans-1,3-Dichloropropene	10061-02-6	125	N.D.
Ethylbenzene	100-41-4	125	N.D.
Methylene chloride	75-09-2	625	N.D.
Styrene	100-42-5	125	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	125	N.D.
Tetrachloroethene	127-18-4	125	N.D.
Toluene	108-88-3	125	N.D.
1,1,1-Trichloroethane	71-55-6	125	5,100
1,1,2-Trichloroethane	79-00-5	125	N.D.
Trichloroethene	79-01-6	125	32,000
Trichlorofluoromethane	75-69-4	125	N.D.
Vinyl acetate	108-05-4	250	N.D.
Vinyl chloride	75-01-4	125	N.D.
Total Xylenes	1330-20-7	250	N.D.
Dichlorodifluoromethane	75-71-8	125	N.D.
cis-1-2,-Dichloroethene	156-59-2	125	810
2,2-Dichloropropane	594-20-7	125	N.D.
Bromochloromethane	74-97-5	125	N.D.
1,1-Dichloropropene	563-58-6	125	N.D.
Dibromomethane	74-95-3	125	N.D.
1,2-Dibromoethane	106-93-4	125	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-2
Laboratory Sample Number: 98100162
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	125	N.D.
Isopropylbenzene	98-82-8	125	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	125	N.D.
1,2,3-Trichloropropane	96-18-4	125	N.D.
Bromobenzene	108-86-1	125	N.D.
n-Propylbenzene	103-65-1	125	N.D.
2-Chlorotoluene	95-49-8	125	N.D.
1,3,5-Trimethylbenzene	108-67-8	125	N.D.
4-Chlorotoluene	106-43-4	125	N.D.
tert-Butylbenzene	98-06-6	125	N.D.
1,2,4-Trimethylbenzene	95-63-6	125	N.D.
sec-Butylbenzene	135-98-8	125	N.D.
4-Isopropyltoluene	99-87-6	125	N.D.
1,3-Dichlorobenzene	541-73-1	125	N.D.
1,4-Dichlorobenzene	106-46-7	125	N.D.
n-Butylbenzene	104-51-8	125	N.D.
1,2-Dichlorobenzene	95-50-1	125	N.D.
1-2-Dibromo-3-CPA	96-12-8	125	N.D.
1,2,4-Trichlorobenzene	120-82-1	125	N.D.
Hexachlorobutadiene	87-68-3	125	N.D.
Naphthalene	91-20-3	125	N.D.
1,2,3-Trichlorobenzene	87-61-6	125	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	96
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, WCC-5S
Laboratory Sample Number: 98100163
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	17
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	3.7
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-5S
Laboratory Sample Number: 98100163
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	96
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/16/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98100164
Laboratory Reference #: HLA 10507

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical,Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98100164
Laboratory Reference #: HLA 10507

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	94
4-Bromofluorobenzene	97

Orange Coast Analytical,Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10507

Sampled: 10/19,20/98
Received: 10/21/98
Analyzed: 10/23/98
Reported: 10/27/98

Dissolved Iron (EPA 6010A)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS mg/l*
98100151	TMW-9	0.18
98100152	TMW-1	0.80
98100153	TMW-6	N.D.
98100154	TMW-5	N.D.
98100157	TMW-7	0.088
98100158	TMW-60	N.D.
98100159	TMW-4	0.088
98100160	TMW-8	0.83
98100161	TMW-3	N.D.
98100162	TMW-2	N.D.
98100163	WCC-5S	N.D.
Detection Limit:		0.05

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10507

Sampled: 10/19,20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Chloride (EPA 325.3)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS mg/l*
98100151	TMW-9	240
98100152	TMW-1	870
98100153	TMW-6	370
98100154	TMW-5	70
98100157	TMW-7	300
98100158	TMW-60	300
98100159	TMW-4	350
98100160	TMW-8	270
98100161	TMW-3	200
98100162	TMW-2	550
98100163	WCC-5S	40

Detection Limit:	1.0

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10507

Sampled: 10/19,20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Nitrate/Nitrite as N (EPA 353.3)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS mg/l*
98100151	TMW-9	3.1
98100152	TMW-1	10
98100153	TMW-6	5.2
98100154	TMW-5	4.6
98100157	TMW-7	1.2
98100158	TMW-60	1.1
98100159	TMW-4	1.8
98100160	TMW-8	7.7
98100161	TMW-3	7.6
98100162	TMW-2	1.9
98100163	WCC-5S	14
Detection Limit:		1.0

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/19,20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water,

Laboratory Reference #: HLA 10507

CO2

LABORATORY SAMPLE NUMBER	***CLIENT SAMPLE NUMBER***	***SAMPLE RESULTS mg/l***
98100151	TMW-9	53
98100152	TMW-1	46
98100153	TMW-6	63
98100154	TMW-5	23
98100157	TMW-7	30
98100158	TMW-60	49
98100159	TMW-4	77
98100160	TMW-8	30
98100161	TMW-3	51
98100162	TMW-2	130
98100163	WCC-5S	49

Detection Limit:	1.0

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10507

Sampled: 10/19,20/98
Received: 10/21/98
Analyzed: 10/22/98
Reported: 10/27/98

Methane/Ethane (8015m)

LABORATORY SAMPLE NUMBER	CLIENT SAMPLE NUMBER	Methane mg/l	Ethane mg/l
98100151	TMW-9	N.D.	N.D.
98100152	TMW-1	N.D.	N.D.
98100153	TMW-6	N.D.	N.D.
98100154	TMW-5	N.D.	N.D.
98100157	TMW-7	N.D.	N.D.
98100158	TMW-60	N.D.	N.D.
98100159	TMW-4	N.D.	N.D.
98100160	TMW-8	N.D.	N.D.
98100161	TMW-3	N.D.	N.D.
98100162	TMW-2	N.D.	N.D.
98100163	WCC-5S	N.D.	N.D.
Detection Limit:		50	50

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis :10/22/98
Laboratory Sample No : 98100156
Laboratory Reference No : HLA 10507

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	20	20	20	100	100	0
1,1-Dichloroethene	0.0	20	19	20	95	100	5
Trichloroethene	0.0	20	20	21	100	105	5
Toluene	0.0	20	19	20	95	100	5
Chlorobenzene	0.0	20	20	21	100	105	5

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Orange Coast Analytical, Inc.

QC DATA REPORT

Date of Analysis : 10/22/98
Laboratory Sample No : 98100162, 98100153, 98100157
Laboratory Reference No : HLA 10507

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Chloride	550	500	1030	1040	96	98	1
CO2	63	100	160	167	97	104	4
Nitrate/Nitrite	0.24	0.25	0.50	0.48	104	96	4
Methane	0	100	107	100	107	100	7

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Orange Coast Analytical, Inc.

QC DATA REPORT

Analysis : Dissolved Iron (EPA 6010A)

Date of Analysis : 10/23/98
Laboratory Sample No : 98100151
Laboratory Reference No : HLA 10507

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Iron	0.18	0.10	0.28	0.27	100	90	4

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Orange Coast Analytical, Inc.

PAGE 1 of 2

HLA
...ding Lawson Associates
... Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 42455-1

Name/Location: BOEING

Project Manager: JIM VAN DE WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-8260	6010A - DIS. IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO_2	8015M ETHANE/METHANE
23	X				2		1	3				98	10	19	1135	TMW-9							X	X	X	X	X	X
23	X				2		1	3				98	10	19	1255	TMW-1							X	X	X	X	X	X
23	X				2		1	3				98	10	19	1225	TMW-6							X	X	X	X	X	X
23	X				2		1	3				98	10	19	1425	TMW-5							X	X	X	X	X	X
23	X							3				98	10	19	1030	TMW-70							X					
23	X							1				98	10	16	—	TRIP BLANK							X					
23	X				2		1	3				98	10	20	0845	TMW-7							X	X	X	X	X	X
23	X				2		1	3				98	10	20	0850	TMW-60							X	X	X	X	X	X
23	X				2		1	3				98	10	20	0935	TMW-4							X	X	X	X	X	X
23	X											98	10	20	1010	TMW-8							X	X	X	X	X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.
						QUESTIONS? CALL
						NICK HAGEN

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 10-21-98 0530	[signature]	10/21 0800
[signature]		

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) [signature] 10-21-98 DATE/TIME 8:40am

METHOD OF SHIPMENT

6533

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

BOE-C6-0043257

HLA
ding Lawson Associates
30 Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

PAGE 2 OF 2

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 42455-1

Name/Location: BOEING

Project Manager: JIM VON DE WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-8260	6010A - DIS. IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO_2	8015M - ETHANE/METHANE
23	X				2		1	3				98	10	20	1055	TMW-3							X	X	X	X	X	X
23	X				2		1	3				98	10	20	1210	TMW-2							X	X	X	X	X	X
23	X				2		1	3				88	10	20	1410	WCC-5S							X	X	X	X	X	X
23	X							1				98	10	16		TRIP BLANK							X					

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.
						QUESTIONS? CALL
						NICK HAGEN

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 10-21-98 0530	[signature] 10/21	0800
[signature]		

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) [signature] DATE/TIME 10-21-98 8:40am

METHOD OF SHIPMENT

6533

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

BOE-C6-0043258

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print) : Mark Noorani

Client: Harding Lawson

Project No.: 42455-1

Project Name: Boeing

Laboratory Reference: HLA 10507

Analytical Method: 8260, 6010A, 325.3, 353.3, 415.1

Date Sampled: 10/16,21,22/98
Date Received: 10/22/98
Date Reported: 10/27/98

Sample Matrix: Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-3D
Laboratory Sample Number: 98100177
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	50
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	27
1,1,1-Trichloroethane	71-55-6	0.5	54
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	7.8
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	1.6
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-3D
Laboratory Sample Number: 98100177
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	96
Toluene-d8	94
4-Bromofluorobenzene	97

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-9S
Laboratory Sample Number: 98100178
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	20
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	14
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	0.71
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	120
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-9S
Laboratory Sample Number: 98100178
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	98
Toluene-d8	94
4-Bromofluorobenzene	96

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-4S
Laboratory Sample Number: 98100179
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	***CAS NUMBER***	***DETECTION Limit (ug/l)***	***SAMPLE RESULTS (ug/l)***
Benzene	71-43-2	5.0	N.D.
Bromodichloromethane	75-27-4	5.0	N.D.
Bromoform	75-25-2	5.0	N.D.
Bromomethane	74-83-9	10	N.D.
Carbon Disulfide	75-15-0	5.0	N.D.
Carbon tetrachloride	56-23-5	5.0	N.D.
Chlorobenzene	108-90-7	5.0	N.D.
Chlorodibromomethane	124-48-1	5.0	N.D.
Chloroethane	75-00-3	5.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	5.0	N.D.
Chloroform	67-66-3	5.0	5.7
Chloromethane	74-87-3	5.0	N.D.
1,1-Dichloroethane	75-34-3	5.0	19
1,2-Dichloroethane	107-06-2	5.0	9.5
1,1-Dichloroethene	75-35-4	5.0	1,100
Trans 1,2-Dichloroethene	156-60-5	5.0	11
1,2-Dichloropropane	78-87-5	5.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	5.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	5.0	N.D.
Ethylbenzene	100-41-4	5.0	N.D.
Methylene chloride	75-09-2	25	N.D.
Styrene	100-42-5	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
Tetrachloroethene	127-18-4	5.0	N.D.
Toluene	108-88-3	5.0	N.D.
1,1,1-Trichloroethane	71-55-6	5.0	N.D.
1,1,2-Trichloroethane	79-00-5	5.0	11
Trichloroethene	79-01-6	5.0	970
Trichlorofluoromethane	75-69-4	5.0	N.D.
Vinyl acetate	108-05-4	10	N.D.
Vinyl chloride	75-01-4	5.0	N.D.
Total Xylenes	1330-20-7	10	N.D.
Dichlorodifluoromethane	75-71-8	5.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	5.0	11
2,2-Dichloropropane	594-20-7	5.0	N.D.
Bromochloromethane	74-97-5	5.0	N.D.
1,1-Dichloropropene	563-58-6	5.0	N.D.
Dibromomethane	74-95-3	5.0	N.D.
1,2-Dibromoethane	106-93-4	5.0	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-4S
Laboratory Sample Number: 98100179
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	5.0	N.D.
Isopropylbenzene	98-82-8	5.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	5.0	N.D.
1,2,3-Trichloropropane	96-18-4	5.0	N.D.
Bromobenzene	108-86-1	5.0	N.D.
n-Propylbenzene	103-65-1	5.0	N.D.
2-Chlorotoluene	95-49-8	5.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	5.0	N.D.
4-Chlorotoluene	106-43-4	5.0	N.D.
tert-Butylbenzene	98-06-6	5.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	5.0	N.D.
sec-Butylbenzene	135-98-8	5.0	N.D.
4-Isopropyltoluene	99-87-6	5.0	N.D.
1,3-Dichlorobenzene	541-73-1	5.0	N.D.
1,4-Dichlorobenzene	106-46-7	5.0	N.D.
n-Butylbenzene	104-51-8	5.0	N.D.
1,2-Dichlorobenzene	95-50-1	5.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	5.0	N.D.
Hexachlorobutadiene	87-68-3	5.0	N.D.
Naphthalene	91-20-3	5.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	93
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-12S
Laboratory Sample Number: 98100180
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	5.0	N.D.
Carbon Disulfide	75-15-0	2.5	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	2.5	N.D.
Chloroform	67-66-3	2.5	9.2
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	110
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	120
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	12.5	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	2.9
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	530
Trichlorofluoromethane	75-69-4	2.5	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	5.0	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	2.5	3.2
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1.1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-12S
Laboratory Sample Number: 98100180
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	2.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	100
Toluene-d8	95
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-11S
Laboratory Sample Number: 98100181
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	1.0	N.D.
Bromodichloromethane	75-27-4	1.0	N.D.
Bromoform	75-25-2	1.0	N.D.
Bromomethane	74-83-9	2.0	N.D.
Carbon Disulfide	75-15-0	1.0	N.D.
Carbon tetrachloride	56-23-5	1.0	N.D.
Chlorobenzene	108-90-7	1.0	N.D.
Chlorodibromomethane	124-48-1	1.0	N.D.
Chloroethane	75-00-3	1.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	1.0	N.D.
Chloroform	67-66-3	1.0	N.D.
Chloromethane	74-87-3	1.0	N.D.
1,1-Dichloroethane	75-34-3	1.0	N.D.
1,2-Dichloroethane	107-06-2	1.0	N.D.
1,1-Dichloroethene	75-35-4	1.0	35
Trans 1,2-Dichloroethene	156-60-5	1.0	N.D.
1,2-Dichloropropane	78-87-5	1.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	1.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	1.0	N.D.
Ethylbenzene	100-41-4	1.0	N.D.
Methylene chloride	75-09-2	5.0	N.D.
Styrene	100-42-5	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
Tetrachloroethene	127-18-4	1.0	N.D.
Toluene	108-88-3	1.0	N.D.
1,1,1-Trichloroethane	71-55-6	1.0	N.D.
1,1,2-Trichloroethane	79-00-5	1.0	N.D.
Trichloroethene	79-01-6	1.0	140
Trichlorofluoromethane	75-69-4	1.0	N.D.
Vinyl acetate	108-05-4	2.0	N.D.
Vinyl chloride	75-01-4	1.0	N.D.
Total Xylenes	1330-20-7	2.0	N.D.
Dichlorodifluoromethane	75-71-8	1.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	1.0	1.8
2,2-Dichloropropane	594-20-7	1.0	N.D.
Bromochloromethane	74-97-5	1.0	N.D.
1,1-Dichloropropene	563-58-6	1.0	N.D.
Dibromomethane	74-95-3	1.0	N.D.
1,2-Dibromoethane	106-93-4	1.0	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-11S
Laboratory Sample Number: 98100181
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	1.0	N.D.
Isopropylbenzene	98-82-8	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
1,2,3-Trichloropropane	96-18-4	1.0	N.D.
Bromobenzene	108-86-1	1.0	N.D.
n-Propylbenzene	103-65-1	1.0	N.D.
2-Chlorotoluene	95-49-8	1.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	1.0	N.D.
4-Chlorotoluene	106-43-4	1.0	N.D.
tert-Butylbenzene	98-06-6	1.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	1.0	N.D.
sec-Butylbenzene	135-98-8	1.0	N.D.
4-Isopropyltoluene	99-87-6	1.0	N.D.
1,3-Dichlorobenzene	541-73-1	1.0	N.D.
1,4-Dichlorobenzene	106-46-7	1.0	N.D.
n-Butylbenzene	104-51-8	1.0	N.D.
1,2-Dichlorobenzene	95-50-1	1.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	1.0	N.D.
Hexachlorobutadiene	87-68-3	1.0	N.D.
Naphthalene	91-20-3	1.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	103
Toluene-d8	96
4-Bromofluorobenzene	100

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water, WCC-7S
Laboratory Sample Number: 98100182
Laboratory Reference #: HLA 10514

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	1.0	N.D.
Bromodichloromethane	75-27-4	1.0	N.D.
Bromoform	75-25-2	1.0	N.D.
Bromomethane	74-83-9	2.0	N.D.
Carbon Disulfide	75-15-0	1.0	N.D.
Carbon tetrachloride	56-23-5	1.0	N.D.
Chlorobenzene	108-90-7	1.0	N.D.
Chlorodibromomethane	124-48-1	1.0	N.D.
Chloroethane	75-00-3	1.0	N.D.
2-Chloroethyl vinyl ether	110-75-8	1.0	N.D.
Chloroform	67-66-3	1.0	N.D.
Chloromethane	74-87-3	1.0	N.D.
1,1-Dichloroethane	75-34-3	1.0	1.4
1,2-Dichloroethane	107-06-2	1.0	N.D.
1,1-Dichloroethene	75-35-4	1.0	300
Trans 1,2-Dichloroethene	156-60-5	1.0	N.D.
1,2-Dichloropropane	78-87-5	1.0	N.D.
cis-1,3-Dichloropropene	10061-01-5	1.0	N.D.
trans-1,3-Dichloropropene	10061-02-6	1.0	N.D.
Ethylbenzene	100-41-4	1.0	N.D.
Methylene chloride	75-09-2	5.0	N.D.
Styrene	100-42-5	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
Tetrachloroethene	127-18-4	1.0	N.D.
Toluene	108-88-3	1.0	N.D.
1,1,1-Trichloroethane	71-55-6	1.0	N.D.
1,1,2-Trichloroethane	79-00-5	1.0	1.6
Trichloroethene	79-01-6	1.0	240
Trichlorofluoromethane	75-69-4	1.0	N.D.
Vinyl acetate	108-05-4	2.0	N.D.
Vinyl chloride	75-01-4	1.0	N.D.
Total Xylenes	1330-20-7	2.0	N.D.
Dichlorodifluoromethane	75-71-8	1.0	N.D.
cis-1-2,-Dichloroethene	156-59-2	1.0	1.0
2,2-Dichloropropane	594-20-7	1.0	N.D.
Bromochloromethane	74-97-5	1.0	N.D.
1,1-Dichloropropene	563-58-6	1.0	N.D.
Dibromomethane	74-95-3	1.0	N.D.
1,2-Dibromoethane	106-93-4	1.0	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-7S
Laboratory Sample Number: 98100182
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	1.0	N.D.
Isopropylbenzene	98-82-8	1.0	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1.0	N.D.
1,2,3-Trichloropropane	96-18-4	1.0	N.D.
Bromobenzene	108-86-1	1.0	N.D.
n-Propylbenzene	103-65-1	1.0	N.D.
2-Chlorotoluene	95-49-8	1.0	N.D.
1,3,5-Trimethylbenzene	108-67-8	1.0	N.D.
4-Chlorotoluene	106-43-4	1.0	N.D.
tert-Butylbenzene	98-06-6	1.0	N.D.
1,2,4-Trimethylbenzene	95-63-6	1.0	N.D.
sec-Butylbenzene	135-98-8	1.0	N.D.
4-Isopropyltoluene	99-87-6	1.0	N.D.
1,3-Dichlorobenzene	541-73-1	1.0	N.D.
1,4-Dichlorobenzene	106-46-7	1.0	N.D.
n-Butylbenzene	104-51-8	1.0	N.D.
1,2-Dichlorobenzene	95-50-1	1.0	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	1.0	N.D.
Hexachlorobutadiene	87-68-3	1.0	N.D.
Naphthalene	91-20-3	1.0	N.D.
1,2,3-Trichlorobenzene	87-61-6	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	102
Toluene-d8	95
4-Bromofluorobenzene	97

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-61
Laboratory Sample Number: 98100183
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	73
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	27
1,1,1-Trichloroethane	71-55-6	0.5	72
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	8.5
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	1.8
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-61
Laboratory Sample Number: 98100183
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	102
Toluene-d8	96
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, TMW-71
Laboratory Sample Number: 98100184
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, TMW-71
Laboratory Sample Number: 98100184
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	103
Toluene-d8	96
4-Bromofluorobenzene	100

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/16/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98100185
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1-2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Trip Blank
Laboratory Sample Number: 98100185
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	0.5	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	99
Toluene-d8	95
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/22/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-6S
Laboratory Sample Number: 98100186
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	10	12
Bromodichloromethane	75-27-4	10	N.D.
Bromoform	75-25-2	10	N.D.
Bromomethane	74-83-9	20	N.D.
Carbon Disulfide	75-15-0	10	N.D.
Carbon tetrachloride	56-23-5	10	N.D.
Chlorobenzene	108-90-7	10	N.D.
Chlorodibromomethane	124-48-1	10	N.D.
Chloroethane	75-00-3	10	N.D.
2-Chloroethyl vinyl ether	110-75-8	10	N.D.
Chloroform	67-66-3	10	N.D.
Chloromethane	74-87-3	10	N.D.
1,1-Dichloroethane	75-34-3	10	20
1,2-Dichloroethane	107-06-2	10	N.D.
1,1-Dichloroethene	75-35-4	10	2,800
Trans 1,2-Dichloroethene	156-60-5	10	33
1,2-Dichloropropane	78-87-5	10	N.D.
cis-1,3-Dichloropropene	10061-01-5	10	N.D.
trans-1,3-Dichloropropene	10061-02-6	10	N.D.
Ethylbenzene	100-41-4	10	N.D.
Methylene chloride	75-09-2	50	N.D.
Styrene	100-42-5	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
Tetrachloroethene	127-18-4	10	N.D.
Toluene	108-88-3	10	N.D.
1,1,1-Trichloroethane	71-55-6	10	19
1,1,2-Trichloroethane	79-00-5	10	N.D.
Trichloroethene	79-01-6	10	1,700
Trichlorofluoromethane	75-69-4	10	N.D.
Vinyl acetate	108-05-4	20	N.D.
Vinyl chloride	75-01-4	10	N.D.
Total Xylenes	1330-20-7	20	N.D.
Dichlorodifluoromethane	75-71-8	10	N.D.
cis-1-2,-Dichloroethene	156-59-2	10	100
2,2-Dichloropropane	594-20-7	10	N.D.
Bromochloromethane	74-97-5	10	N.D.
1,1-Dichloropropene	563-58-6	10	N.D.
Dibromomethane	74-95-3	10	N.D.
1,2-Dibromoethane	106-93-4	10	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-6S
Laboratory Sample Number: 98100186
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	10	N.D.
Isopropylbenzene	98-82-8	10	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	10	N.D.
1,2,3-Trichloropropane	96-18-4	10	N.D.
Bromobenzene	108-86-1	10	N.D.
n-Propylbenzene	103-65-1	10	N.D.
2-Chlorotoluene	95-49-8	10	N.D.
1,3,5-Trimethylbenzene	108-67-8	10	N.D.
4-Chlorotoluene	106-43-4	10	N.D.
tert-Butylbenzene	98-06-6	10	N.D.
1,2,4-Trimethylbenzene	95-63-6	10	N.D.
sec-Butylbenzene	135-98-8	10	N.D.
4-Isopropyltoluene	99-87-6	10	N.D.
1,3-Dichlorobenzene	541-73-1	10	N.D.
1,4-Dichlorobenzene	106-46-7	10	N.D.
n-Butylbenzene	104-51-8	10	N.D.
1,2-Dichlorobenzene	95-50-1	10	N.D.
1-2-Dibromo-3-CPA	96-12-8	10	N.D.
1,2,4-Trichlorobenzene	120-82-1	10	N.D.
Hexachlorobutadiene	87-68-3	10	N.D.
Naphthalene	91-20-3	10	N.D.
1,2,3-Trichlorobenzene	87-61-6	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	105
Toluene-d8	92
4-Bromofluorobenzene	98

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/22/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water, WCC-3S
Laboratory Sample Number: 98100187
Laboratory Reference #: HLA 10514

VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
Benzene	71-43-2	250	470
Bromodichloromethane	75-27-4	250	N.D.
Bromoform	75-25-2	250	N.D.
Bromomethane	74-83-9	500	N.D.
Carbon Disulfide	75-15-0	250	N.D.
Carbon tetrachloride	56-23-5	250	N.D.
Chlorobenzene	108-90-7	250	N.D.
Chlorodibromomethane	124-48-1	250	N.D.
Chloroethane	75-00-3	250	N.D.
2-Chloroethyl vinyl ether	110-75-8	250	N.D.
Chloroform	67-66-3	250	N.D.
Chloromethane	74-87-3	250	N.D.
1,1-Dichloroethane	75-34-3	250	1,100
1,2-Dichloroethane	107-06-2	250	N.D.
1,1-Dichloroethene	75-35-4	250	41,000
Trans 1,2-Dichloroethene	156-60-5	250	1,300
1,2-Dichloropropane	78-87-5	250	N.D.
cis-1,3-Dichloropropene	10061-01-5	250	N.D.
trans-1,3-Dichloropropene	10061-02-6	250	N.D.
Ethylbenzene	100-41-4	250	N.D.
Methylene chloride	75-09-2	1250	N.D.
Styrene	100-42-5	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
Tetrachloroethene	127-18-4	250	N.D.
Toluene	108-88-3	250	68,000
1,1,1-Trichloroethane	71-55-6	250	4,700
1,1,2-Trichloroethane	79-00-5	250	N.D.
Trichloroethene	79-01-6	250	490
Trichlorofluoromethane	75-69-4	250	N.D.
Vinyl acetate	108-05-4	500	N.D.
Vinyl chloride	75-01-4	250	N.D.
Total Xylenes	1330-20-7	500	N.D.
Dichlorodifluoromethane	75-71-8	250	N.D.
cis-1-2,-Dichloroethene	156-59-2	250	11,000
2,2-Dichloropropane	594-20-7	250	N.D.
Bromochloromethane	74-97-5	250	N.D.
1,1-Dichloropropene	563-58-6	250	N.D.
Dibromomethane	74-95-3	250	N.D.
1,2-Dibromoethane	106-93-4	250	N.D.

Orange Coast Analytical, Inc.

VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, WCC-3S
Laboratory Sample Number: 98100187
Laboratory Reference #: HLA 10514

ANALYTE	*CAS NUMBER*	*DETECTION Limit (ug/l)*	*SAMPLE RESULTS (ug/l)*
1,3-Dichloropropane	142-28-9	250	N.D.
Isopropylbenzene	98-82-8	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
1,2,3-Trichloropropane	96-18-4	250	N.D.
Bromobenzene	108-86-1	250	N.D.
n-Propylbenzene	103-65-1	250	N.D.
2-Chlorotoluene	95-49-8	250	N.D.
1,3,5-Trimethylbenzene	108-67-8	250	N.D.
4-Chlorotoluene	106-43-4	250	N.D.
tert-Butylbenzene	98-06-6	250	N.D.
1,2,4-Trimethylbenzene	95-63-6	250	N.D.
sec-Butylbenzene	135-98-8	250	N.D.
4-Isopropyltoluene	99-87-6	250	N.D.
1,3-Dichlorobenzene	541-73-1	250	N.D.
1,4-Dichlorobenzene	106-46-7	250	N.D.
n-Butylbenzene	104-51-8	250	N.D.
1,2-Dichlorobenzene	95-50-1	250	N.D.
1-2-Dibromo-3-CPA	96-12-8	250	N.D.
1,2,4-Trichlorobenzene	120-82-1	250	N.D.
Hexachlorobutadiene	87-68-3	250	N.D.
Naphthalene	91-20-3	250	N.D.
1,2,3-Trichlorobenzene	87-61-6	250	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recoveries	%
Dibromofluoromethane	102
Toluene-d8	96
4-Bromofluorobenzene	99

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21,22/98
Received: 10/22/98
Analyzed: 10/23/98
Reported: 10/27/98

Sample Description: Water,

Laboratory Reference #: HLA 10514

Dissolved Iron (EPA 6010A)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS mg/l*
98100177	WCC-3S	N.D.
98100178	WCC-9S	N.D.
98100179	WCC-4S	N.D.
98100180	WCC-12S	N.D.
98100181	WCC-11S	N.D.
98100182	WCC-7S	N.D.
98100186	WCC-6S	1.2
98100187	WCC-3S	28

Detection Limit:	0.05

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10514

Sampled: 10/21,22/98
Received: 10/22/98
Analyzed: 10/22/98
Reported: 10/27/98

Chloride (EPA 325.3)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS mg/l*
98100177	WCC-3S >	90
98100178	WCC-9S	180
98100179	WCC-4S	330
98100180	WCC-12S	300
98100181	WCC-11S	30
98100182	WCC-7S	610
98100186	WCC-6S	420
98100187	WCC-3S	790

Detection Limit:	1.0

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10514

Sampled: 10/21,22/98
Received: 10/22/98
Analyzed: 10/22/98
Reported: 10/27/98

Nitrate/Nitrite as N (EPA 353.3)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS mg/l*
98100177	WCC-3S	0.76
98100178	WCC-9S	5.5
98100179	WCC-4S	1.9
98100180	WCC-12S	6.4
98100181	WCC-11S	1.7
98100182	WCC-7S	2.1
98100186	WCC-6S	1.9
98100187	WCC-3S	N.D.

Detection Limit:	1.0

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sampled: 10/21,22/98
Received: 10/22/98
Analyzed: 10/22/98
Reported: 10/27/98

Sample Description: Water,

Laboratory Reference #: HLA 10514

CO2

LABORATORY SAMPLE NUMBER	***CLIENT SAMPLE NUMBER***	***SAMPLE RESULTS mg/l***
98100177	WCC-3S	21
98100178	WCC-9S	41
98100179	WCC-4S	28
98100180	WCC-12S	28
98100181	WCC-11S	51
98100182	WCC-7S	19
98100186	WCC-6S	19
98100187	WCC-3S	79

Detection Limit:	1.0

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Harding Lawson Associates
ATTN: Mr. Jim Van de Water
30 Corporate Park, Suite 400
Irvine, CA 92714

Client Project ID: Boeing
Client Project #: 42455-1

Sample Description: Water,

Laboratory Reference #: HLA 10514

Sampled: 10/21,22/98
Received: 10/22/98
Analyzed: 10/22/98
Reported: 10/27/98

Methane/Ethane (8015m)

LABORATORY SAMPLE NUMBER	CLIENT SAMPLE NUMBER	Methane mg/l	Ethane mg/l
98100177	WCC-3S	N.D.	N.D.
98100178	WCC-9S	N.D.	N.D.
98100179	WCC-4S	N.D.	N.D.
98100180	WCC-12S	N.D.	N.D.
98100181	WCC-11S	N.D.	N.D.
98100182	WCC-7S	N.D.	N.D.
98100186	WCC-6S	N.D.	N.D.
98100187	WCC-3S	N.D.	N.D.
Detection Limit:		50	50

Analyte reported as N.D. was not present above the stated limit of detection.

Orange Coast Analytical, Inc.

QC DATA REPORT

Date of Analysis : 10/22/98
Laboratory Sample No : 98100178, 98100177, 98100179
Laboratory Reference No : HLA 10514

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Chloride	180	250	420	420	96	96	0
CO2	21	100	118	110	97	89	7
Nitrate/Nitrite	0.38	0.25	0.64	0.62	104	96	3
Methane	0	100	93	96	93	96	3

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Orange Coast Analytical, Inc.

QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 10/23/98
Laboratory Sample No : 98100185
Laboratory Reference No :HLA 10514

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	20	20	18	100	90	11
1,1-Dichloroethene	0.0	20	19	18	95	90	5
Trichloroethene	0.0	20	21	19	105	95	10
Toluene	0.0	20	19	18	95	90	5
Chlorobenzene	0.0	20	20	19	100	95	5

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Orange Coast Analytical, Inc.

QC DATA REPORT

Analysis : Dissolved Iron (EPA 6010A)

Date of Analysis : 10/23/98
Laboratory Sample No : 98100177
Laboratory Reference No : HLA 10514

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Iron	0.00	0.10	0.082	0.083	82	83	1

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Orange Coast Analytical, Inc.

HLA
[illegible]ng Lawson Associates
3[illegible] [illegible]porate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: [illegible]

Job Number: 42455-1

Name/Location: BOEING

Project Manager: JIM VAN DE WATER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	EPA-8260	6010A - DIS. IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO2	8015 M - ETHANE/METHANE
23	X				2		1	3				98	10	22	0750	WCC-3S							X	X	X	X	X	X

ANALYSIS REQUESTED

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 10-22-98 1036		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) [signature] 10-22-98 DATE/TIME 10:36

METHOD OF SHIPMENT

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6533

BOE-C6-0043290

ing Lawson Associates
Corporate Park, Suite 400
Irvine, CA 92714
(714) 260-1800

CHAIN OF CUSTODY FORM

Lab: ORANGE COAST

Samplers: MIKE PALMER

Job Number: 42455-1

Name/Location: BOEING

Project Manager: JIM VAN DE WATER

Recorder: (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	FOH-8260	6010A - DES, IRON	325.3 CHLORIDE	353.3 NITRATE/NITRITE	CO_2	8015M - ETHANE/METHANE
23	X				2		1	3				98	10	21	1500	WCC-3D							X	X	X	X	X	X
23	X				2		1	3				98	10	21	0810	WCC-9S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	1325	WCC-4S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	1210	WCC-12S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	1115	WCC-11S							X	X	X	X	X	X
23	X				2		1	3				98	10	21	0930	WCC-7S							X	X	X	X	X	X
23	X							3				98	10	21	1505	WCC-6I							X					
23	X							3				98	10	21	0630	TDIW-7I							X					
23	X							1				98	10	16	—	TRIP BLANK							X					
23	X				2		1	3				98	10	22	0655	WCC-6S							X	X	X	X	X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						NORMAL T.A.T.
						QUESTIONS? CALL NICK HAGEN

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
10-22-98 1036		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME 10-22-98 10:36

METHOD OF SHIPMENT

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APPENDIX C

BOE-C6-0043292

APPENDIX C

GROUNDWATER MONITORING AND SAMPLING FIELD PROCEDURES

FIELD PROCEDURES

GROUNDWATER MONITORING

Groundwater levels were measured using an electronic well sounder. The electronic sounder uses a tape marked in 1-foot increments and intermediate 0.1 foot intervals. Groundwater levels were recorded to the nearest 0.01 foot from an established surveyed measuring point on the top of the monitoring well casing.

Total well depth was measured by lowering the electronic sounder to the bottom of the monitoring well. Depth to water was measured directly off the tape from the measuring point on the top of the well casing. To assure that accurate readings were taken, the electronic sounder was raised and lowered two or three times before recording the measurement on the groundwater sampling form. To minimize the potential for cross-contamination, the monitoring equipment was cleaned between wells by washing with Liqui-Nox and rinsing with deionized water.

Quality Assurance and Quality Control of Field Measurements

To check the monitoring results, field measurements were compared to the previous month's measurements. If any obvious discrepancies were noted, the well was measured again to ensure that the measurement had been recorded correctly.

Prior to measuring the wells, the monitoring equipment was inspected for any damage, including bends or kinks in the tape. To maintain consistency and precision, the same monitoring equipment was used each month. The tape measures were periodically compared with a calibrated tape measure to check for accuracy and to ensure that the tape measures had not stretched.

Monitoring Well Purging

The volume of groundwater to be purged from each monitoring well was calculated based on casing volume. The purge water volume was recorded on the groundwater sampling form. The objective of each purging cycle was to remove a minimum of three to four well-casing volumes of water from the well before collecting a sample.

The order in which the wells were purged was from lowest to highest VOC based on data provided by IES for previous groundwater sampling. The wells were pumped by attaching a 1/2-inch-diameter, clear polyvinyl chloride (PVC) hose to the submersible pump and lowering the pump into the monitoring well.

During pumping, the pump was lowered to approximately 5 to 10 feet below the static water level in the monitoring well. As groundwater was extracted from the well, the temperature, pH, and electrical conductivity (EC) were measured.

To minimize the potential for cross contamination, the purging equipment was washed with Liqui-Nox and triple-rinsed with deionized water between wells.

Purge Water Handling and Disposal

Groundwater purged from the monitoring wells and the rinsate water were stored onsite for later profiling and transport to an authorized treatment facility.

Groundwater Sample Collection

A groundwater sample was collected from the monitoring well after a minimum of three to four well-casing volumes of water was removed and the temperature, pH, and EC had stabilized. After purging was completed, the wells were allowed to recover to within 80 percent of their prepurge level before samples were collected. In general, the wells recovered almost instantaneously to their prepurge level after purging and were sampled immediately.

The monitoring wells were sampled by using a 1.5-inch-diameter Teflon bailer with a bottom check ball. The wells were sampled in the same order as they were purged. The bailer was lowered to the approximate location of the pump intake. The water sample was decanted from the bottom of the bailer into two 40-milliliter glass sample vials using a sampling port. The vials were carefully filled to avoid overflow. The vials were immediately sealed with Teflon-lined screw lids so that the formation of air bubbles was avoided. Once the vial was sealed, it was inverted to ensure that no air bubbles had been trapped. If air bubbles were present, the water sample was discarded, and the procedure was repeated until two vials were collected. To minimize the potential for cross contamination, the sampling bailer was washed with Liqui-Nox and triple-rinsed with demonized water between monitoring wells.

Once collected, the samples were labeled with the monitoring well identification number and the date and time of sample collection. The samples were double-bagged in plastic Ziploc bags and immediately placed in an ice chest filled with "blue ice" or equivalent. The samples were recorded on a chain-of-custody form prepared and signed by the person(s) collecting the samples. Prior to shipment, the samples were carefully packed with foam padding to avoid breakage of the sample vials during transport. The samples were then delivered to the State-certified laboratory performing the analyses.

Quality Assurance and Quality Control of Field Procedures

During the field work, written field reports were prepared daily, documenting the work activities and any unusual events or occurrences. Groundwater monitoring and sampling report forms were also prepared. At the end of each sampling day or as soon as possible, the written reports and the groundwater monitoring and sampling reports were reviewed by the task manager for completeness and accuracy of data collected. Any unusual occurrences or discrepancies in the field work being performed were noted by the task manager on the written reports and on the groundwater monitoring and sampling reports. The task manager then communicated the discrepancies to the field personnel to verify the reports prior to beginning the following day's field work and/or the next month's sampling round.

Quality Assurance and Quality Control Samples

To provide for quality assurance and quality control (QA/QC) documentation during each sampling round, a minimum of one duplicate and one equipment rinsate blank were collected per event. A trip blank was also prepared in the field and/or by a State-certified laboratory and transported with each batch of samples (if the trip blank was prepared in the field, distilled water was used). The QA/QC samples were labeled with a predetermined sample number and shipped with the other samples. To reduce the

possibility of the QA/QC samples being identified by the laboratory performing the analyses, the QA/QC samples were recorded on the same chain-of-custody form used for the other samples.

LABORATORY ANALYSIS

Laboratory Performing the Analyses and Certifications

Orange Coast Analytical Laboratory in Tustin, performed the analyses during the monitoring and sampling efforts.

Quality Assurance and Quality Control of Laboratory Data

When the laboratory reports were received from the laboratory, data were reviewed for completeness and accuracy. The review process consisted of validating the following:

- Chain-of-custody documentation for completeness and signatures by laboratory sample control personnel,
- Type and method of analyses performed,
- Date of extraction and analysis for each batch of samples analyzed by the laboratory; confirmation that samples were analyzed within the prescribed 14-day holding time,
- That matrix spikes, duplicates, method blanks, and surrogates were analyzed and if results were within the prescribed warning and control limits specified for each analyte,
- Comparison of results with the results of original samples analyzed for any duplicates, splits, and spiked samples submitted blindly to the laboratory with the results of original samples analyzed, and
- Signature of the laboratory QA/QC officer verifying that all tests performed met the prescribed procedures.

DISTRIBUTION

Groundwater Monitoring and Sampling
September and October 1998
Boeing Realty Corporation C-6 Facility
Los Angeles, California

January 4, 1999

Copies 1 and 2:	Mr. Mario Stavale Boeing Realty Corporation 4060 Lakewood Boulevard, 6th Floor Long Beach, California, 90808-3200
Copies 3 and 4:	Mr. Chris Stoker Integrated Environmental Services 3990 Westerly Place, Suite 210 Newport Beach, California 92660
Copies 5 and 6:	Project File
Copy 7:	HLA Library

Quality Control Reviewer

Donald A. Pape, C.E.G.
Principal Hydrogeologist

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