161

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Engineering Environmental
and Construction Services

May 4, 2000

49380 1

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

Letter Report
Groundwater Sampling and Well Destruction, Well TMW-17
Boeing C-6 Facility
Los Angeles, California

Dear Mr. Stavale,

INTRODUCTION

Harding Lawson Associates (HLA) is pleased to submit this letter report to Boeing Realty Corporation (BRC) regarding the gauging, sampling, and destruction of temporary groundwater monitoring well TMW-17 located at the Boeing C-6 facility, 19503 South Normandie Avenue, Los Angeles, California. The objective of this project was to provide sampling and destruction of Well TMW-17 according to the December 1998 Sampling and Analysis Plan approved by the California EPA, Department of Toxic Substances Control (DTSC) and guidelines of the Los Angeles Department of Health Services (DHS), respectively. This letter report describes the field activities that were performed and presents the analytical data for this project as outlined in HLA's proposal/workplan dated January 11, 2000.

FIELD ACTIVITIES

The field activities included gauging and collecting the required groundwater samples, transporting the samples to the analytical laboratory, the destruction of monitoring well TMW-17, and the storage, removal, and disposal of all wastes generated at the site. A description of the field activities is presented below:

Groundwater gauging, sampling, and analysis

Temporary monitoring well TMW-17 was gauged and sampled on January 14, 2000. Gauging was accomplished using an electronic water level meter. Air monitoring for volatile organic compounds was performed with a photoionization detector (PID) upon opening the well cap. After the well was gauged, approximately five well volumes of groundwater were purged using an electric submersible pump. The groundwater was monitored for field parameters including temperature, pH, turbidity, and electrical conductivity during purging. A field log was maintained to document these parameters and is included in Appendix A.

A groundwater sample was collected for chemical analysis after purging the well. The sample was collected using a new, disposable polyethylene bailer equipped with a low-flow bottom-emptying device. The sample was decanted into two 40-ml VOA vials and one 500-ml polyethylene bottle to be analyzed for trichloroethene (TCE) by EPA Method 8260 and for hexavalent chromium by EPA Method 7196, respectively. The fraction for Chromium VI analysis was prepared by filtering in the field using a peristaltic pump and a disposable 0.45-micron filter.

The sample was transported for testing on the day of collection via courier to Orange Coast Analytical, Tustin, California, a state-certified laboratory. The sample was transported in a chilled ice under chain-of-custody protocol. Laboratory test results and chain-of-custody documentation for the groundwater sample is included in Appendix B.

New drinking-water grade polyethylene tubing was used to purge the well. All non-disposable sampling equipment was decontaminated before each use with an Alconox detergent wash and double rinse with distilled water. The submersible pump was decontaminated by placing the pump in a container and pumping 20 gallons of potable water through it, and then rinsing again with distilled water. Decontamination fluids were stored in a 55-gallon drum for disposal after profiling.

Well Destruction

Temporary monitoring well TMW-17 was destroyed on January 19, 2000. The well was destroyed by overdrilling the well casing, screen, grout, and sand pack using eight-inch diameter hollow stem auger equipment operated by THF Drilling of Fontana. After overdrilling, the boring was pressure-backfilled through the augers in 20- to 30-foot lifts from total depth to approximately 15 feet below ground surface (bgs) with a Portland cement/water mixture and a one-inch diameter tremie pipe. The upper 15 feet of the borehole was backfilled with ready-mix concrete to the ground surface. All drilling equipment was decontaminated before each using a steam cleaner. An HLA geologist was present to supervise the destruction of the monitoring well. A PID was used for health and safety air monitoring during drilling. Field logs were maintained to document all field activities. The following is a tabulation of overdrilling and backfilling observations for the destroyed well:

Overdrilling Observations	TMW-17
Original Depth of Well (height above ground), feet	82 (2)
Depth of Overdrilling, feet	83
Blank Casing Removed (condition), feet	64 (intact)
Screened Casing Removed, feet	20 (intact)
Auger Depth Before Cuttings Observed, feet bgs	25
Grout Removed, cubic yards	1.4
Bentonite- Grout/Sand Mix removed, yards	0.6
Backfilling Observations	
Backfill Mixture, Portland (bags)/Water (Gallons)	4/30
Total Quantity of Portland Used (bags)	30

During overdrilling of the well, grout cuttings were not observed at the surface until the augers reached a depth of 25 feet bgs (see above table). In discussions with the drilling contractor they maintained that for wells backfilled with bentonite grout, which does not set up like Portland cement, it is uncommon to observe cuttings at the surface until a significant portion of the well has been overdrilled. The reasons for this are the smaller relative volume of material being overdrilled (grout only occupies annular space between PVC casing and borehole wall) compared to drilling in undisturbed ground and that the fluidity of the grout does not allow it to readily travel up the auger flights. A HLA registered geologist observed and photographed remaining wells BL-1 through BL-4 to check if significant settlement of the grout had occurred. The photographs, included in Appendix A, show that there was little to no settlement of the grout at each of these wells. We therefore do not believe that the bentonite grout underwent significant settlement at Well TMW-17.

Waste storage, hauling, and disposal

Purge and decontamination water from the groundwater sampling and well abandonment activities was stored in a 55-gallon drum. Waste from the well destruction activities (well materials, sand pack, sealing materials) was contained in a roll-off bin.

Printed on Recycled Paper.

Thank you for the opportunity to provide our services to you. If you have any questions regarding this letter, please contact Mark Clardy at (949) 224-0050.

Very truly yours,
Harding Lawson Associates

Mark Clardy
Senior Geologist

David J. DeVries, R.G., C.H.G.
Senior Hydrogeologist

Attachments:	Plate 1	Vicinity Map
	Plate 2	Site Plan
	Appendix A	Field Logs and Photographs of Wells BL-1 through BL-4
	Appendix B	Laboratory Results and Chain-of-Custody Forms – Groundwater and Waste Disposal Profile Samples
	Appendix C	Well Destruction Permit and Non-Hazardous Waste Data Forms

N:\Boeing\letter\TMW_rpt.doc

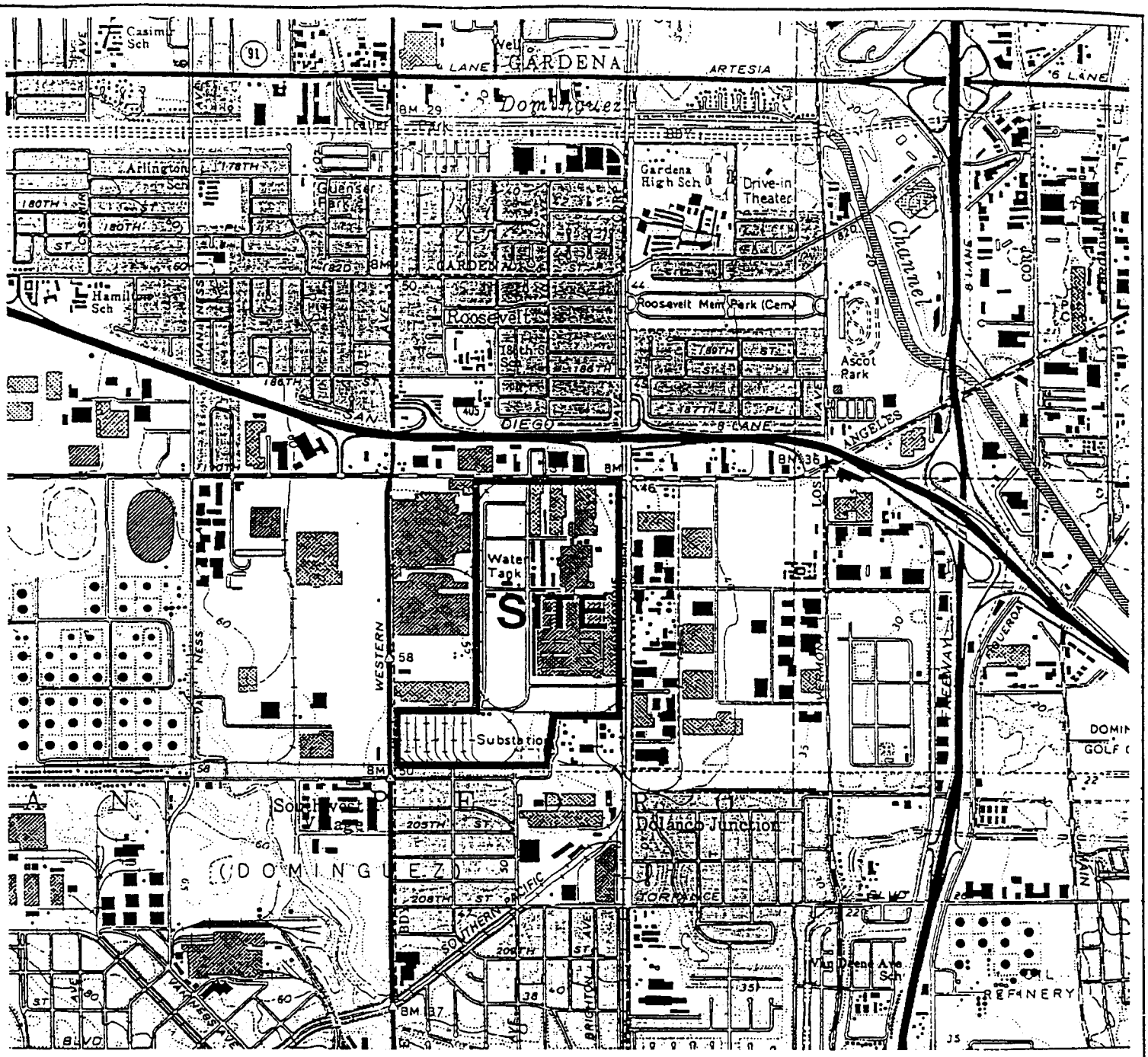
cc: Mr. Tom Danaher – Integrated Environmental Services, Inc.

REGISTERED GEOLOGIST
DAVID J. DeVRIES
No. 6313
Exp. 4-30-01
STATE OF CALIFORNIA

PLATES

BOE-C6-0142810

PLATES



Harding Lawson Associates
Engineering and
Environmental Services

HLA

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	

Three composite waste profile samples, two soil (SP-1 and SP-2) and one wastewater (WWP-1), were collected at the end of the investigation to be analyzed by EPA Method 8260, EPA Method 418.1, EPA Method 8082, and for Title 22 CAM Metals. The waste samples were transported for profiling on the day of collection (January 19, 2000) via courier to BC Analytical in Bakersfield, California, a state-certified laboratory. The samples were handled and transported in a chilled ice chest under chain-of-custody protocol.

Upon receipt and evaluation of the analytical profiling test data, all wastes were removed from the property for disposal as non-hazardous material. The waste soil was disposed at Filter Recycling Services in Rialto by Consolidated Waste Industries, Montclair, California. The wastewater was disposed at the Crosby & Overton facility in Long Beach by Cameron Environmental, Torrance, California. Non-hazardous waste data forms for disposal of the waste are included in Appendix C.

RESULTS

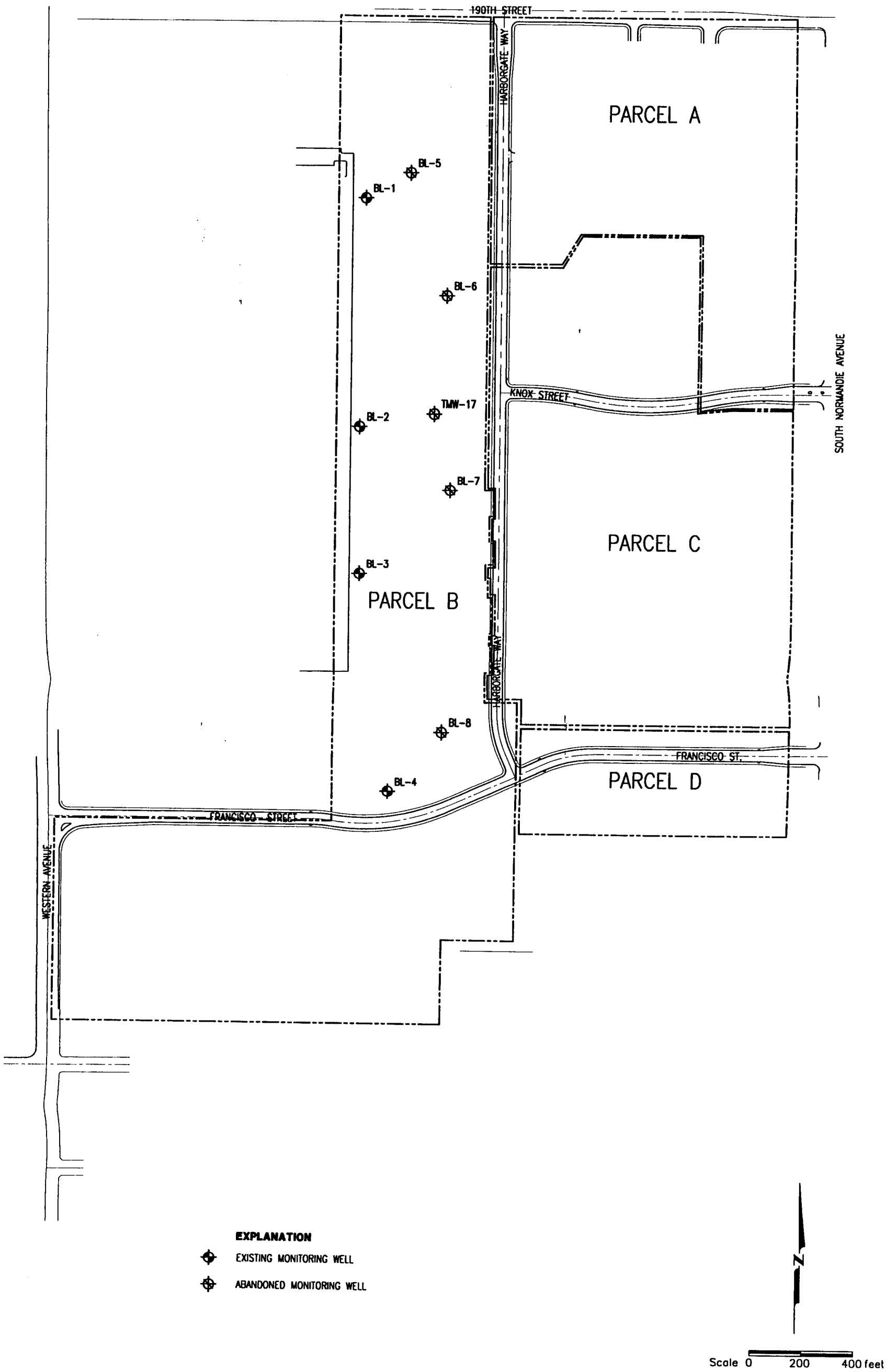
The results of the groundwater level gauging, groundwater sample analyses, and waste soil and groundwater profile sample analyses are presented in the following tables:

Groundwater gauging and purging

Well No.	Top of Casing Elevation (feet MSL)	Depth to Water (feet btoc)	Groundwater Elevation (feet MSL)	Volume of Water Purged (Gallons)	Headspace PID Reading (ppm)
TMW-17	55.54	68.95	-13.41	13	0

Groundwater and Waste Disposal Profile Sample Analyses

Analyte (µg/L)	Monitoring Well TMW-17		
Chloroform	1.6		
Trichloroethene	25		
	Soil (SP) and Wastewater (WWP) Profile		
	SP-1	SP-2	WWP-1
Bromodichloromethane	ND	ND	0.32
Chloroform	ND	ND	3.2
Dibromochloromethane	ND	ND	0.49
Ethly Benzene	ND	ND	0.17
Methylene Chloride	ND	ND	0.43
Naphthalene	ND	ND	0.36
Toluene	ND	ND	3.6
Trichloroethene	ND	ND	2.0
1,2,4 – Trimethylbenzene	ND	ND	0.11
Total Xylenes	ND	ND	0.84
Methyl Tertiary Butyl Ether	ND	ND	1.4



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Engineering and Environmental Services

SITE PLAN WITH MONITORING WELL LOCATIONS
Boeing C-6 Facility
Los Angeles, California

PLATE **2**

DRAWN	PROJECT-TASK NUMBER	APPROVED	DATE	REVISED DATE
JTL	49380-2		2/00	

APPENDIX A

BOE-C6-0142815

APPENDIX A
FIELD LOGS AND PHOTOGRAPHS OF WELLS BL-1 THROUGH BL-4

Sheet COVER of

Project: BOEING -
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: MP./BW

(outside service and expense record must be attached for any outside costs)

ACTIVITIES -
- REVIEW SITE INFO AND H.A.S.P.
- GAUGE V.O.C'S IN WELL HEAD SPACE
- MONITOR WATER LEVELS.
- PURGE AND SAMPLE WATER WELLS PER WORK PLAN
- COLLECT QA/QC SAMPLES PER WORK PLAN.

PERSONEL ON SITE DURING ACTIVITIES,
- MIKE PALMER (HLA)
- BRETT WILCOX (HLA)
- ANDERSON CHANG (IES)
- B.C. LAB COURIER.

SAMPLES COLLECTED

SAMPLES	TYPE	LAB
TRAVEL BLANK	LAB	B.C. LAB
FB-9 / FB-9-NF	FIELD BLANK	" "
RB-9 / RB-9-NF	RINSATE BLANK	" "
BL-8 / BL-8-NF	WELL	" "
BL-7 / BL-7-NF	WELL	" "
BL-5 / BL-5-NF	WELL	" "
BL-6 / BL-6-NF	WELL	" "
TMW-17 / TMW-17-NF	WELL	ORANGE COAST LABS.

Attachments:

Initial

Harding Lawson Associates

FF1

BOE-C6-0142817

Project: BOEING - WATER SAMPLING
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to:
By: MIKE PALMER / BRETT WILCOX

(outside service and expense record must be attached for any outside costs)

0500 - LEFT TO MEET BRETT WILCOX AT OFFICE TO LOAD MATERIALS
0530 - LEAVING FOR SITE IN HLA #560 / 601
0610 - ARRIVED AT SITE.
- SETTING UP "QUAD" RINSE DECON STATION NEAR SOIL / WATER DRUMS STAGED NEAR TMW-17
- THOROUGHLY CLEANED PUMP / SOLINST / CHECK VALVE
- CALIBRATED P.I.D. AND HORIBA U-10 (PARAMETER METER)
- REVIEWED H.A.S.P. AND SITE INFO. W/ BRETT.
0730 - PREPAIRING TO MONITOR WATER LEVELS IN 8 BL WELLS AND 1 TMW-17 WELL. (ANDERSON IES CHANG ON SITE)
- P.I.D. READINGS WILL BE TAKEN AS SOON AS CAP IS REMOVED FROM WELL. I WILL INSERT P.I.D. HOSE INLET INTO WELL CASE THEN COVER TO AVOID AMBIENT AIR INTO WELL CASE. LOOK FOR P.I.D. READINGS ON WATER LEVEL DATA SHEET
0810 - FINISHED MONITORING WELLS
* A FIELD BLANK WAS COLLECTED AND LABELED FB-9 AND FB-9-NF (NF = NON-FILTERED ON ALL SAMPLES)
* A RINSATE BLANK WAS COLLECTED AND LABELED RB-9 AND RB-9-NF
0820 - MOBILIZING AT TMW-17 (ANDERSON IES CHANG ON SITE)
- SET UP EQUIPMENT
- INSTALLED NEW 1/2" HOSE PER WORK PLAN. AS PUMP WENT DOWN WELL.
- WILL PURGE 4 WELL VOLS AND MEASURE pH / TEMP / COND / TURB. PARAMETERS AND LOG ON FORM
- PURGED WATER INTO 55 GAL. DRUM
0855 - SAMPLED WELL PER WORK PLAN LABELED TMW-17 / TMW-17-MP

Attachments: - HOSE WAS REMOVED FROM PUMP WHEN PULLED FROM WELL.

Initial [signature]

FF1

Harding Lawson Associates

Project: BOEING
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: MIKE PALMER/B.W.

(outside service and expense record must be attached for any outside costs)

- DEMOBING TO DECON AREA TO CLEAN EQUIP AND TRANSFER WATER. DECON PER WORK PLAN
2930 - MOBILIZING AT BL-8
- INSTALLING NEW 1/2" HOSE AS PUMP IS LOWERED IN WELL
- SET UP EQUIP.
- PURGED 4 WELL VOLS MONITORING PARAMETERS
- REMOVED PUMP FROM WELL SEPERATING OLD HOSE.
1005 - COLLECTED SAMPLES LABELED BL-8/BL-8-NF
- DEMOBING TO DECON AREA FOR DECON PROCEDURES.
1045 - MOBILIZING AT BL-7
- INSTALLED NEW 1/2" HOSE AS PUMP LOWERED INTO WELL
- PURGED ALMOST 5 WELL VOLS WAITING FOR TURB. TO BE INTO SPEC'S.
- REMOVED PUMP SEPERATING HOSE.
1115 - COLLECTED SAMPLES LABELED BL-7/BL-7-NF
- DEMOBING TO DECON AREA (ANDERSON & CHANG ON SITE)
- PERFORMING DECON.
1145 - MOBILIZING ~~AT~~ BL-5
- INSTALLING NEW 1/2" HOSE INTO WELL WITH PUMP.
- PURGED 4 WELL VOLS. PARAMETERS STABILIZE.
- REMOVED PUMP AND SEPERATED HOSE.
1215 - COLLECTED SAMPLES FROM WELL LABELED BL-5/BL-5-NF
- DEMOBING TO DECON AREA FOR DECON PROCEDURES.
1300 - MOBILIZING AT BL-6 (ANDERSON CHANG ON SITE)
- INSTALLED NEW 1/2" HOSE WITH PUMP INTO WELL.
- PURGED ~~6~~ WELL VOLS. UNTIL TURB. ~~REACHED~~ REACHED SPEC.
- REMOVED PUMP SEPERATING HOSE.
1335 - COLLECTED SAMPLE LABELED BL-6/BL-6-NF
- DEMOBING TO DECON AREA FOR JOB BREAKDOWN

Attachments: MARK CLARDY HAS INFORMED ME THAT LAB COURIER WILL BE IN AREA AROUND 2:00PM.
Initial:

Project: BOEING.
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: WP / BW.

(outside service and expense record must be attached for any outside costs)

- CLEANED ALL EQUIP.
* ALL GROUND WATER / DECON WATER WAS PLACED IN 55 GAL. DRUMS. THERE ARE 4 DRUMS LEFT AT SITE. THEY ARE LABELED W/ CAUTION LABELS
- THE DRUMS WILL BE LEFT NEAR TMW-17 AS PER ANDERSON CHANG (BFS)

1415 - B.W. OFF SITE TO COURIER SAMPLES TO ORANGE COAST LABS UNDER C.O.C. AND DELIVER EQUIPMENT.
* I GAVE P.E.O. AND H.A.S.P. TO ANDERSON CHANG AS PER MARK CLARDY

1430 - COURIER FROM B.C. LABS ON SITE.
1435 - SIGNED OVER SAMPLES
- BEGAN PLACING CUSTODY STRIPS.

1510 - OFF SITE

Attachments:

Initial

FF1

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WATER LEVEL DATA SHEET

INSTRUMENT/MODEL # : SOLINST 150'

PROJECT: BOEING

JOB NUMBER: 49380-1 and -2

NAME: MIKE PALMER, BRETT WILCOX

DATE: 1-14-00

SHEET 1 OF 1

WELL NUMBER	TIME	DEPTH TO WATER 1st READING	~~DEPTH TO WATER 2nd READING~~ T.D.	DEPTH TO WATER 3rd READING	COMMENTS SECTION P.I.O. READINGS
TMW-17	0740	68.95	84.47		0.0 p.p.m.
BL-2		71.55	~~83.77~~	MONITOR ONLY	0.0 p.p.m.
BL-7		69.60	80.20		82.3 ppm.
BL-8		71.68	82.50		0.0 ppm
BL-4		70.56	—	MONITOR ONLY	0.0 ppm
BL-3		73.41	—	MONITOR ONLY	0.0 ppm
BL-6		67.85	80.33		0.0 ppm.
BL-5		68.05	80.20		0.0 ppm.
BL-1		71.04	—	MONITOR ONLY	0.0 ppm

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Well No. TMW-17
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☐ PVC ☐ St. Steel ☐ Other
Date 1-14-00 Time 0820
Sampled by MP/BW (Initials)

Job Name BOEING
Job Number 49380-1
Recorded by (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): 84.47
Water Level Depth (WL in feet BTOC): 68.95
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): 84' Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION

(84.47 - 68.95) x 2² x 4 x 0.0408 = 10.13 gallons

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

PURGE TIME

0832 Start 0846 Stop ~~0846~~ 14 Elapsed

PURGE RATE

Initial 1.0 gpm Final gpm

ACTUAL PURGE VOLUME

~~11.5~~ 13 gallons

FIELD PARAMETER MEASUREMENT

~~Minutes Since~~ GALLONS Pumping Began	pH	Cond. (µmhos/cm)	T ☒°C ☐°F	Other TURB
~~INITIAL~~	6.84	1.28	20.6	999+
5	6.82	1.22	21.6	412
7	6.81	1.20	21.8	83
9	6.83	1.21	21.8	29
11	6.84	1.21	21.9	13

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒°C ☐°F	Other TURB
13	6.86	1.20	21.9	4.1
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other 55 GAL. DRUMS.

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-17	1/250ml	CHROMIUM 6	N/A	~~[illegible]~~	
TMW-17	2/40ml	8260	HCL	ORANGE CONT	TIME:
					0855

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

BOEING C-6 FACILITY
HARBORGATE, TORRANCE, CA.

Project: BRC - WELL ABANDONMENT (BL-06) Job No.: 49311.00.1
Subject: FIELD INVESTIGATION DAILY REPORT Date: JAN - 18 - 2000
Equipment Rental: _____ Company: _____ To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ By: [illegible]

(outside service and expense record must be attached for any outside costs)

1700 TAG BL-06 @ 79.5' bgs (0.5' stick-up.)
1705 BEGIN OVERDRILLING - cuttings up (GROUT) AT.
— SMALL AMOUNT OF CHIPS UP w/ soil UNTIL
CUTTINGS UP AT ABOUT 30' bgs (GROUT [VOLUCLAY])
1810 TD to 80' bgs - CLEAN-OUT BOREHOLE
pull up ≈ 8' OVERNIGHT.
1830 OFFSITE FOR DAY - THF OVER to BL-08 to
MOVE DRUMS, SUPPLIES SO GRADING CAN START IN
THE MORNING

JAN 19, 2000

0630 ONSITE w/ THF
LOWER TREMIE PIPE to ≈ 70' bgs. (GROUT - bentonite - SAND
MIXTURE ON HAMMER ABOUT 8'. MIX first batch
PORTLAND (4 BAGS 320 GALLONS). BATCHES as fill
FLOWS OVER AUGERS - PULL AUGERS IN 25' lifts while
backfilling to keep PORTLAND WITHIN AUGERS - FALLS
out of AUGERS while pulling out.
0900 SLURRY BACKFILL IN - 7 BATCHES (27 BAGS PORTLAND)
CLEAN SITE
DECON (1 DRUM)
DUMP cuttings to BIN - (1½ YARDS)
70% VOLCLAY
30% bentonite / SAND (filter pack + formation)
0930 MOB to TMW-17

Attachments:

Initial

Boeing C-6 Facility
Harbor Gate, Torrance, CA.

Project: BRC - WELL ABANDONMENT (TMW-17 | Job No.: 49312.00.1
Subject: FIELD INVESTIGATION DAILY REPORT | Date: JAN-19-2000
Equipment Rental: _____ Company: _____ | To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ | By: RHA

(outside service and expense record must be attached for any outside costs)

0940 tag TMW-17 to 82' bgs (2' stickup)
pull monument out 4' threaded piece came out
hand auger down about 2' to expose female end
clean threads, screw 3' section from prior well into TMW-17.
1010 Begin overdrilling TMW-17 - cuttings up (grat) @ 25' bgs
1100 *collect profile samples
Decon bailer: take WWP-1 (waste-water profile) from drum of purge/decon water from 1-11-00 sampling drum and decon drum from BL-07.
1/3 from sampling drum
2/3 from decon drum
take SP-1/2 (soil profile) from bottom cuttings of BL-06 and top cuttings from TMW17.

(*tried to collect soil samples from two zones as seen from cuttings on augers)

1130 Finish boring to 83' bgs - clean-out
1145 Lower tremie pipe to 75' bgs, take short lunch
1215 Mix first batch slurry (4 bags/30 gal)
1255 BC labs picked up samples.
1500 slurry backfill in - 7½ batches (30 bags)
Clean site decon (1 drum)
Dump cuttings to bin (2 yards)
70 % vol clay
30 % bentonite / sand (filter pack + formating)

* Michael Lui, DEHS, visited site @ 1200

Attachments:

Initial →

1-19-00

1600 tag top of Portland @ 12' bgs @ BL-07
mix ready-mix concrete. 8 bags ready-mix
in to surface.

take decon drums (4) + groundwater decon/purge
drums (4) to bin area. total 55-gal
drums.

Load well casing + trash put in
top of bin for disposal. will go
to landfill so no need to seperate
cuttings. (grout) from trash. (see
Consolidated waste)

1700 Tag top of Portland @ 13' bgs @ BL-05
mix ready-mix concrete 8 ½ bags in to complete
to surface.

1730 Tag top of Portland @ 12' bgs @ B-06.
mix ready-mix concrete 7 ½ bags in to surface

1800 Tag top of Portland @ 12' bgs @ TMW17
mix ready-mix concrete 8 bags in to surface.

mixed concrete in wheel-barrell. Filled bottom
of barrel w/ water (≈ 2.5 gal) mixed in 2 bags
per batch. poured downhole.

* some of blank/screen casing were 20' lengths, so had
to break them to fit into bin.

1830 offsite for day!

Sheet 1 of 1

Project: BOEING.
Job No.: 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 2-16-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: M PALMER

(outside service and expense record must be attached for any outside costs)

0800- LEFT FOR SITE IN H&A #560, IT'S RAINING
0815- MARK C. PAGED ME, EXITED FREEWAY TO CALL HIM.
- HE IS CALLING TO CHECK IF HAULING CONTRACTORS WILL BE GOING TO SITE
0845- GOT OK TO CONTINUE.
0930- AT HARBORGATE GATE LOCATING LOCATIONS OF DRUMS OF WATER AND SOIL BIN.
1015- CAMERON ENVIR. ON SITE. TAKING THEM ONTO FACILITY FOR WATER DRUMS.
*THERE ARE ONLY 8 DRUMS OF WATER LOCATED NEAR SOIL BIN IN DESCRIBED LOCATION AREA.
- WE LEFT FACILITY TO PICK UP 3 WATER DRUMS NEAR WELL #7 ACROSS FROM GAURD GATE.
*THESE DRUMS ARE IN A MUD LOT AND CAMERONS' TRUCK WILL NOT BE ABLE TO DRIVE TO DRUMS WE WILL HAVE BRING DRUMS TO TRUCK.
- CAMERON ENVIRN. HAS REMOVED 11 55 GAL DRUMS OF WATER. SEE MANIFEST.
1105- CONSOLIDATED WASTE AT GAURD GATE. LET HIM ONTO FACILITY TO REMOVE SOIL BIN.
- SEE MANIFEST.
1140- OFF SITE.
1230- BACK AT OFFICE.

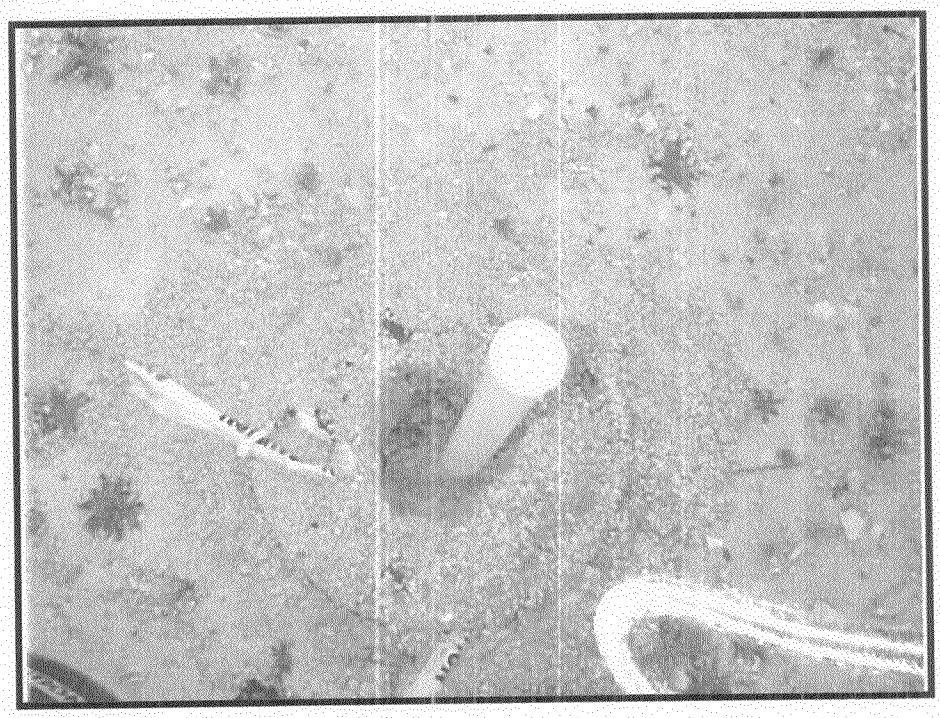
Attachments:

Initial

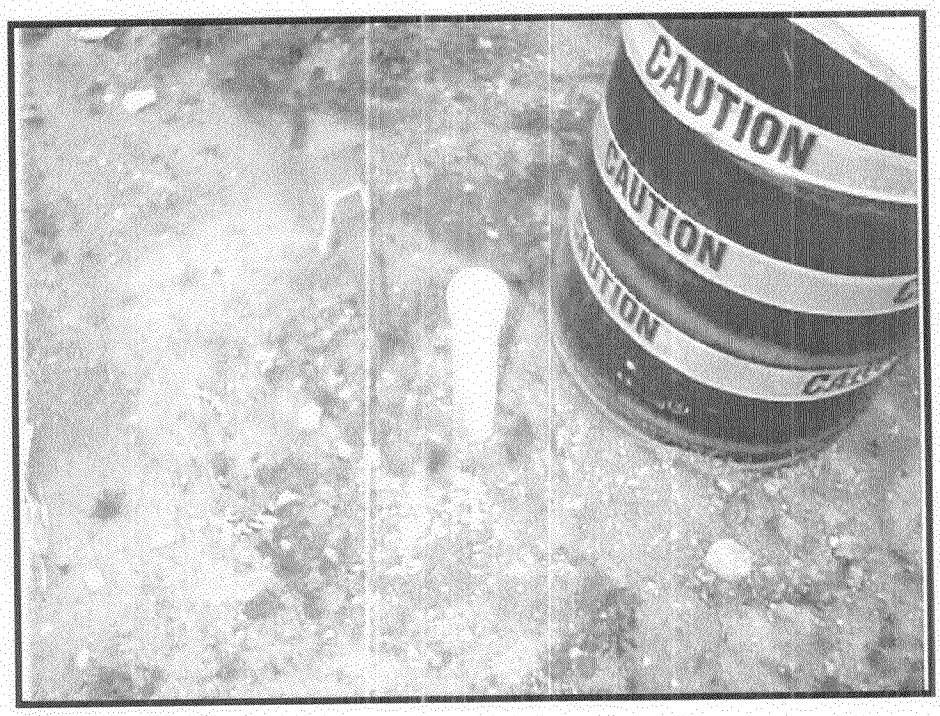
FF1

Harding Lawson Associates

BOE-C6-0142826



Well BL-1 showing approximately 4 inches of bentonite grout seal settlement.

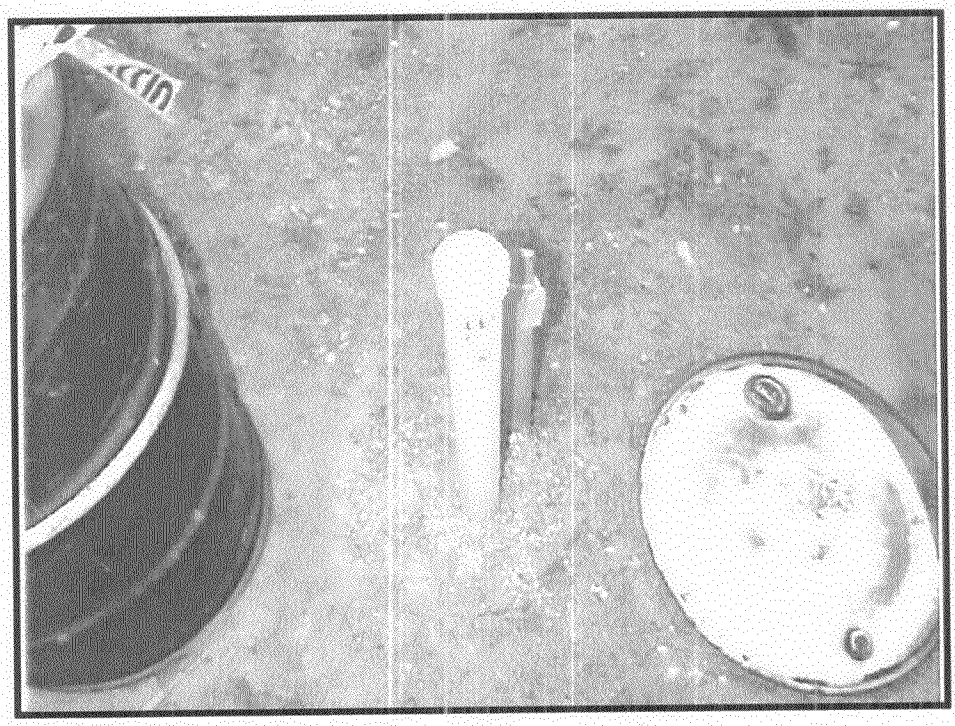


Well BL-2 with small hole in bentonite grout seal from previous metal stake. No settlement of grout.

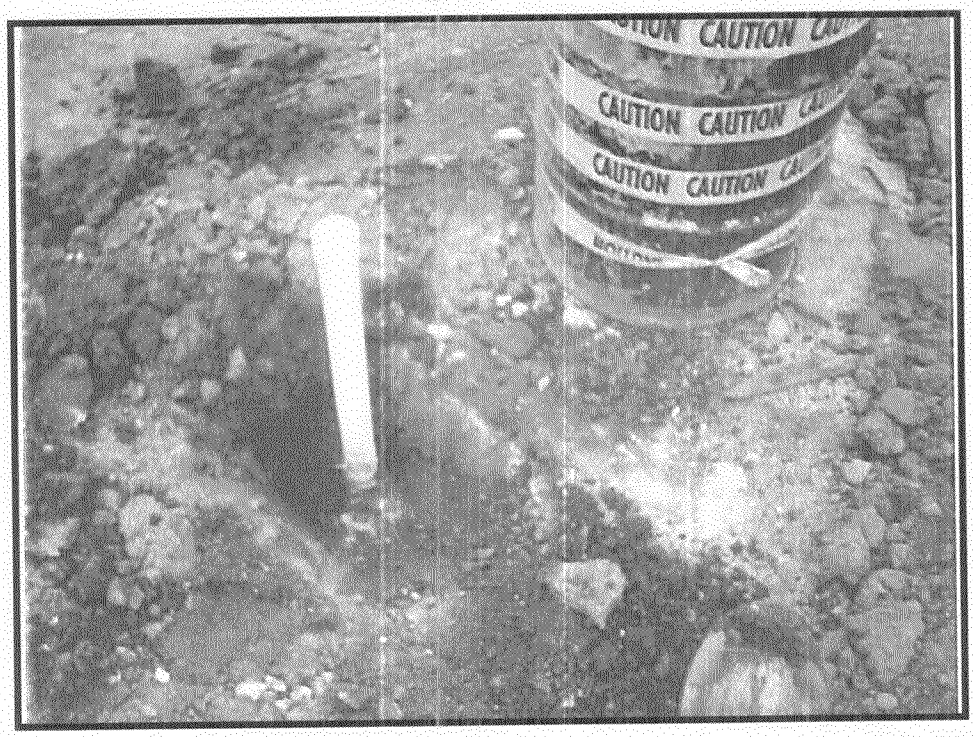
Harding Lawson Associates
Engineering and Environmental Services
2171 Campus Drive, Suite 100
Irvine, California 92612 - (949) 224-0050

SITE PHOTOGRAPHS

BOEING



Well BL-3 with negligible grout settlement.



Well BL-4 with top of bentonite grout found at 1 foot below surface beneath soil backfill.

Harding Lawson Associates
Engineering and Environmental Services
2171 Campus Drive, Suite 100
Irvine, California 92612 - (949) 224-0050

SITE PHOTOGRAPHS

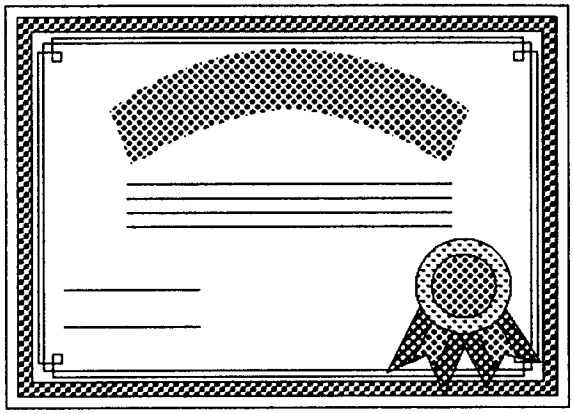
BOEING

APPENDIX B

BOE-C6-0142829

APPENDIX B
LABORATORY RESULTS AND CHAIN-OF-CUSTODY FORMS – GROUNDWATER AND WASTE DISPOSAL PROFILE SAMPLING

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) [illegible]
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (480) 736-0960 Fax (480) 736-0970



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.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (480) 736-0960 Fax (480) 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: 2001

Laboratory Director's Name (Print) : Mark Noorani

Client: Harding Lawson

Project No.:

Project Name: Boeing

Laboratory Reference: HLA 11344

Analytical Method: 8260, Cr VI

Date Sampled: 01/14/00
Date Received: 01/14/00
Date Reported: 01/17/00

Sample Matrix: Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

Harding Lawson
Mr. Mark Clardy
2171 Campus Suite #100
Irvine, CA 92626

Client Project ID: Boeing
Client Project #:

Sampled: ---
Received: ---
Analyzed: 01/14/00
Reported: 01/17/00

Sample Description: Water, Method Blank
Laboratory Sample Number: MB0114
Laboratory Reference #: HLA 11344

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.

INT *m.u.*

Orange Coast Analytical, Inc.

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

Sample Description: Water, Method Blank
Laboratory Sample Number: MB0114
Laboratory Reference #: HLA 11344

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	99
Toluene-d8	109
4-Bromofluorobenzene	111

INT m·n·

Orange Coast Analytical, Inc.

Harding Lawson
Mr. Mark Clardy
2171 Campus Suite #100
Irvine, CA 92626

Client Project ID: Boeing
Client Project #:

Sample Description: Water, TMW-17
Laboratory Sample Number: 00010049
Laboratory Reference #: HLA 11344

Sampled: 01/14/00
Received: 01/14/00
Analyzed: 01/14/00
Reported: 01/17/00

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	1.6
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	25
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.

INT m.n.

Orange Coast Analytical, Inc.

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

Sample Description: Water, TMW-17
Laboratory Sample Number: 00010049
Laboratory Reference #: HLA 11344

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	100
Toluene-d8	113
4-Bromofluorobenzene	115

INT m.n.

Orange Coast Analytical, Inc.

Harding Lawson
Mr. Mark Clardy
2171 Campus Suite #100
Irvine, CA 92626

Client Project ID: Boeing
Client Project #:

Sample Description: Water,
Laboratory Reference #: CDM 111344

Sampled:	---	01/14/00	01/14/00
Received:	---	01/14/00	01/14/00
Reported:	01/17/00	01/17/00	01/17/00
Lab Sample I.D.	Method Blank	00010049	00010050
Client Sample I.D.	MB0114	TMW-17	TMW-17 -NF

METALS ***SAMPLE RESULTS***

ANALYTE	***DATE TESTED***	***EPA METHOD***			
			mg/l	***mg/l***	***mg/l***
Chromium (VI)	01/14/00	7196	<0.01	<0.01	<0.01

QC DATA REPORT

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

Date of Analysis : 01/14/00
Laboratory Sample No : 00010047
Laboratory Reference No : HLA 11344

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	2.5	20	24	23	108	103	4
1,1-Dichloroethene	0.0	20	19	17	95	85	11
Trichloroethene	0.0	20	22	22	110	110	0
Toluene	6.5	20	27	26	103	98	4
Chlorobenzene	0.0	20	22	21	110	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

INT m.n.

Orange Coast Analytical, Inc.

QC DATA REPORT

Analysis : Metal

Laboratory Reference No : HLA 11344

Analyte	Date Tested	QC Sample	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Chromium (VI)	01/14/00	00010049	0.0	0.50	0.52	0.52	104	104	0

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

INT m.n.

Orange Coast Analytical, Inc.

Harding Lawson Associates
~~351 Rolling Oaks Drive, Suite 100~~
~~Thousand Oaks, CA 91361~~
~~(805) 494-7725 (805) 494-8286~~ FAX 949-2240050
2171 CAMPUS #100
IRVINE, CA. 92626

CHAIN OF CUSTODY FORM

Lab:

Job Number:

Name/Location: BOEING

Project Manager: MARK CLARDY

Samplers: MIKE PALMER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	ADHS BLS-181	EPA 8260	CHROMIUM 6 (FILTERED)	CHROMIUM 6 (NON FILTERED)
	X				1			2					0	0	0	1	1	4	0	8	5	5	TMW-17					X	X	
	X				1								0	0	0	1	1	4	0	8	5	5	TMW-17-NF							X

ANALYSIS REQUESTED

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						24 HR T.A.T
						ON
						CHROMIUM
						SAMPLES
						STANDARD
						ON
						8260

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[signature] 1-14-00 1415	[signature]	
	Guillermo Torres	01.14.00 3:35pm

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) DATE/TIME

METHOD OF SHIPMENT

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

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

BOE-C6-0142840

BC Laboratories, Inc.

WATER ANALYSIS
(METALS)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

Constituents		Results	Units	P.Q.L.	M.D.L.	Method	Date Prepared	Date Analyzed
Total Antimony	*01	None Detected	µg/L	500.	40.	EPA-6010	02/09/00	02/09/00
Total Arsenic		160.	µg/L	4.	3.	EPA-7060	01/21/00	02/01/00
Total Barium	*01	630.	µg/L	100.	5.	EPA-6010	02/09/00	02/09/00
Total Beryllium		None Detected	µg/L	50.	2.	EPA-6010	02/09/00	02/09/00
Total Cadmium		None Detected	µg/L	50.	20.	EPA-6010	02/09/00	02/09/00
Total Chromium	*01	300.	µg/L	50.	20.	EPA-6010	02/09/00	02/09/00
Total Cobalt		None Detected	µg/L	250.	7.	EPA-6010	02/09/00	02/09/00
Total Copper		110.	µg/L	50.	20.	EPA-6010	02/09/00	02/09/00
Total Lead		28.	µg/L	5.	0.4	EPA-7421	01/21/00	01/25/00
Total Mercury		None Detected	µg/L	0.2	0.10	EPA-7470	01/27/00	01/28/00
Total Molybdenum	*06	130.	µg/L	250.	20.	EPA-6010	02/09/00	02/09/00
Total Nickel	*06	30.	µg/L	50.	20.	EPA-6010	02/09/00	02/09/00
Total Selenium		13.	µg/L	2.	1.0	SM-3114B	02/04/00	02/04/00
Total Silver	*01	None Detected	µg/L	50.	20.	EPA-6010	02/09/00	02/09/00
Total Thallium		1.	µg/L	1.	0.7	EPA-7841	01/21/00	01/25/00
Total Vanadium		50.	µg/L	50.	20.	EPA-6010	02/09/00	02/09/00
Total Zinc	*06	130.	µg/L	250.	4.45	EPA-6010	02/09/00	02/09/00

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
M.D.L. = Method Detection Limit

Flag Explanations:
*01 = Note: PQL's and MDL's are raised due to matrix interferences.
*06 = Note: PQL and MDL are raised due to matrix interferences. Sample result is between the MDL AND PQL.

California D.O.H.S. Cert. #1186

Dan Schultz
Laboratory Director

All results listed in this report are for the exclusive use of the submitting party, BC Laboratories, Inc. assumes no responsibility for report alteration, detachment or third party interpretation
4100 Atlas Court * Bakersfield, CA 93308 * (661)327-4911 * Fax(661)327-1918 * www.bclabs.com

BC Laboratories, Inc.

Total Petroleum Hydrocarbons

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

Constituents	Results	Units	P.Q.L.	M.D.L.	Method	Date Prepared	Date Analyzed
Total Recoverable Petroleum Hydrocarbons	None Detected	mg/L	1.0	0.3	EPA-418.1	01/21/00	01/21/00

Note: Sample received at pH=10.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

All results listed in this report are for the exclusive use of the submitting party, BC Laboratories, Inc. assumes no responsibility for report alteration, detachment or third party interpretation

4100 Atlas Court * Bakersfield, CA 93308 * (661)327-4911 * Fax(661)327-1918 * www.bclabs.com

TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1

Title 22 Waste Type: Type ii: Liquid with ≥ 0.5 % solids.
Sample Collected By: KEN

Constituents		Sample Results	Units	Method P.Q.L.	Method	Date Prepared	Date Analyzed	Regulatory Criteria STLC mg/L	Regulatory Criteria TTLC mg/kg
Antimony		None Detected	mg/kg	5.	SW-6010	01/25/00	02/04/00	15.	500.
Arsenic		2.	mg/kg	0.5	SW-7060	01/25/00	01/28/00	5.0	500.
Barium	*31	130.	mg/kg	0.5	SW-6010	01/25/00	02/04/00	100.	10000.
Beryllium		None Detected	mg/kg	0.5	SW-6010	01/25/00	02/04/00	0.75	75.
Cadmium	*04	None Detected	mg/kg	0.5	SW-6010	01/25/00	02/04/00	1.0	100.
Chromium	*05	4.3	mg/kg	0.5	SW-6010	01/25/00	02/04/00	560.	2500.
Cobalt		None Detected	mg/kg	2.5	SW-6010	01/25/00	02/04/00	80.	8000.
Copper	*05	2.4	mg/kg	0.5	SW-6010	01/25/00	02/04/00	25.	2500.
Lead	*05	8.8	mg/kg	2.5	SW-6010	01/25/00	02/04/00	5.0	1000.
Mercury	**	0.66	mg/kg	0.2	SW-7471	01/25/00	01/26/00	0.2	20.
Molybdenum		None Detected	mg/kg	2.5	SW-6010	01/25/00	02/04/00	350.	3500.
Nickel	*31	3.3	mg/kg	2.5	SW-6010	01/25/00	02/04/00	20.	2000.
Selenium		None Detected	mg/kg	0.5	SW-7740	01/25/00	01/31/00	1.0	100.
Silver	*04	None Detected	mg/kg	1.	SW-6010	01/25/00	02/04/00	5.0	500.
Thallium		None Detected	mg/kg	5.	SW-6010	01/25/00	02/04/00	7.0	700.
Vanadium	*05	6.4	mg/kg	0.5	SW-6010	01/25/00	02/04/00	24.	2400.
Zinc	*05	15.	mg/kg	2.5	SW-6010	01/25/00	02/04/00	250.	5000.
Total Petroleum Hydrocarbons		None Detected	mg/kg	20.	EPA-418.1	01/21/00	01/21/00		

(See Last Page for Comments, Definitions, and References)

TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Sample Description: 49311.00.1, BOEING, SP-1, 01/19/2000 @ 11:00, KEN

Comment: All above constituents are reported on an as received (wet) sample basis. Results reported represent totals (TTLC) as sample subjected to appropriate techniques to determine total levels.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
STLC = Soluble Threshold Limit Concentration
TTLC = Total Threshold Limit Concentration

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846.

Flag Explanations:
** = Sample precision is not within established limits. Matrix spike recovery/precision not within established limits. Results may be biased.
*04 = Matrix spike recoveries not within established limits, results may be affected.
*05 = Sample precision is not within established limits.
*31 = Matrix spike recoveries not within established limits, results may be biased. Sample precision is not within established limits.

California D.O.H.S. Cert. #1186

Dan Schultz
Laboratory Director

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TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sampling Date/Time: 01/19/2000 @ 11:00

Title 22 Waste Type: Type ii: Liquid with ≥ 0.5 % solids.
Sample Collected By: KEN

Constituents		Sample Results	Units	P.Q.L.	M.D.L.	Method	Date Prepared	Date Analyzed	Dilution Factor
Antimony		None Detected	mg/kg	5.	0.5	SW-6010	01/25/00	02/04/00	.990099
Arsenic		2.7	mg/kg	0.5	0.2	SW-7060	01/25/00	01/28/00	.990099
Barium	*31	110.	mg/kg	0.5	0.033	SW-6010	01/25/00	02/04/00	.990099
Beryllium		None Detected	mg/kg	0.5	0.029	SW-6010	01/25/00	02/04/00	.990099
Cadmium	*04	None Detected	mg/kg	0.5	0.040	SW-6010	01/25/00	02/04/00	.990099
Chromium	*05	6.9	mg/kg	0.5	0.14	SW-6010	01/25/00	02/04/00	.990099
Cobalt		None Detected	mg/kg	2.5	0.041	SW-6010	01/25/00	02/04/00	.990099
Copper	*05	2.9	mg/kg	0.5	0.006	SW-6010	01/25/00	02/04/00	.990099
Lead	*05	8.3	mg/kg	2.5	0.02	SW-6010	01/25/00	02/04/00	.990099
Mercury	**	None Detected	mg/kg	0.2	0.074	SW-7471	01/25/00	01/26/00	.919117
Molybdenum		None Detected	mg/kg	2.5	0.2	SW-6010	01/25/00	02/04/00	.990099
Nickel	*31	4.5	mg/kg	2.5	0.17	SW-6010	01/25/00	02/04/00	.990099
Selenium		None Detected	mg/kg	0.5	0.2	SW-7740	01/25/00	01/31/00	.990099
Silver	*04	None Detected	mg/kg	1.	0.047	SW-6010	01/25/00	02/04/00	.990099
Thallium		None Detected	mg/kg	5.	0.4	SW-6010	01/25/00	02/04/00	.990099
Vanadium	*05	8.5	mg/kg	0.5	0.044	SW-6010	01/25/00	02/04/00	.990099
Zinc	*05	18.	mg/kg	2.5	0.075	SW-6010	01/25/00	02/04/00	.990099

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TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Sample Description: 49311.00.1, BOEING, SP-2, 01/19/2000 @ 11:00, KEN

Comment: All above constituents are reported on an as received (wet) sample basis. Results reported represent totals (TTLC) as sample subjected to appropriate techniques to determine total levels.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
STLC = Soluble Threshold Limit Concentration
TTLC = Total Threshold Limit Concentration

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846.

Flag Explanations:
** = Sample precision is not within established limits. Matrix spike recovery/precision not within established limits. Results may be biased.
*04 = Matrix spike recoveries not within established limits, results may be affected.
*05 = Sample precision is not within established limits.
*31 = Matrix spike recoveries not within established limits, results may be biased. Sample precision is not within established limits.

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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.

Total Petroleum Hydrocarbons

Harding Lawson and Associates
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Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

Constituents	Results	Units	P.Q.L.	M.D.L.	Method	Date Prepared	Date Analyzed
Total Recoverable Petroleum Hydrocarbons	None Detected	mg/kg	20.	10.	EPA-418.1	01/21/00	01/21/00

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Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

Total Petroleum Hydrocarbons

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

Constituents	Results	Units	P.Q.L.	M.D.L.	Method	Date Prepared	Date Analyzed
Total Recoverable Petroleum Hydrocarbons	None Detected	mg/kg	20.	10.	EPA-418.1	01/21/00	01/21/00

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Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

PCBs
(EPA Method 8082)

Harding Lawson and Associates
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Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/21/2000
Date Analyzed: 01/21/2000 @ 21:22
Analyst: SPB
Dilution Used: 1

Constituents	Analysis Results	Reporting Units	P.Q.L.	M.D.L.
PCB-1016	None Detected	µg/L	0.2	0.002
PCB-1221	None Detected	µg/L	0.2	0.002
PCB-1232	None Detected	µg/L	0.2	0.002
PCB-1242	None Detected	µg/L	0.2	0.032
PCB-1248	None Detected	µg/L	0.2	0.022
PCB-1254	None Detected	µg/L	0.2	0.002
PCB-1260	None Detected	µg/L	0.2	0.046
Total PCB's (Summation)	None Detected	µg/L	0.2	0.002

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	63.	60-140

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M.D.L. = Method Detection Limit
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Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

PCBs
(EPA Method 8082)

Harding Lawson and Associates
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Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1
Sample Matrix: soil
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/29/2000 @ 05:19

Constituents	Analysis Results	Reporting Units	P.Q.L.	M.D.L.
PCB-1016	None Detected	mg/kg	0.01	0.005
PCB-1221	None Detected	mg/kg	0.01	0.005
PCB-1232	None Detected	mg/kg	0.01	0.005
PCB-1242	None Detected	mg/kg	0.01	0.00093
PCB-1248	None Detected	mg/kg	0.01	0.005
PCB-1254	None Detected	mg/kg	0.01	0.00078
PCB-1260	None Detected	mg/kg	0.01	0.0015
Total PCB's (Summation)	None Detected	mg/kg	0.01	0.005

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	80.	60-140

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M.D.L. = Method Detection Limit
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Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

PCBs
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Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sample Matrix: soil
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/29/2000 @ 12:30

Constituents	Analysis Results	Reporting Units	P.Q.L.	M.D.L.
PCB-1016	None Detected	mg/kg	0.01	0.005
PCB-1221	None Detected	mg/kg	0.01	0.005
PCB-1232	None Detected	mg/kg	0.01	0.005
PCB-1242	None Detected	mg/kg	0.01	0.00093
PCB-1248	None Detected	mg/kg	0.01	0.005
PCB-1254	None Detected	mg/kg	0.01	0.00078
PCB-1260	None Detected	mg/kg	0.01	0.0015
Total PCB's (Summation)	None Detected	mg/kg	0.01	0.005

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	53.	60-140

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M.D.L. = Method Detection Limit

Surrogate is low due to matrix interference. Interference verified through second extraction/analysis.

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Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/24/2000 @ 17:16
Dilution Used: 1

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level	
Benzene	None Detected	µg/L	0.5	0.062	
Bromobenzene	None Detected	µg/L	0.5	0.057	
Bromochloromethane	None Detected	µg/L	0.5	0.095	
Bromodichloromethane	0.32	µg/L	0.5	0.10	*02
Bromoform	None Detected	µg/L	0.5	0.079	
Bromomethane	None Detected	µg/L	0.5	0.11	
n-Butylbenzene	None Detected	µg/L	0.5	0.083	
sec-Butylbenzene	None Detected	µg/L	0.5	0.017	
tert-Butylbenzene	None Detected	µg/L	0.5	0.081	
Carbon tetrachloride	None Detected	µg/L	0.5	0.065	
Chlorobenzene	None Detected	µg/L	0.5	0.047	
Chloroethane	None Detected	µg/L	0.5	0.086	
Chloroform	3.2	µg/L	0.5	0.11	
Chloromethane	None Detected	µg/L	0.5	0.13	
2-Chlorotoluene	None Detected	µg/L	0.5	0.072	
4-Chlorotoluene	None Detected	µg/L	0.5	0.061	
Dibromochloromethane	0.49	µg/L	0.5	0.056	*02
1,2-Dibromo-3-Chloropropane	None Detected	µg/L	1.	0.40	
1,2-Dibromoethane	None Detected	µg/L	0.5	0.035	
Dibromomethane	None Detected	µg/L	0.5	0.094	
1,2-Dichlorobenzene	None Detected	µg/L	0.5	0.096	
1,3-Dichlorobenzene	None Detected	µg/L	0.5	0.065	
1,4-Dichlorobenzene	None Detected	µg/L	0.5	0.065	
Dichlorodifluoromethane	None Detected	µg/L	0.5	0.085	*03
1,1-Dichloroethane	None Detected	µg/L	0.5	0.065	
1,2-Dichloroethane	None Detected	µg/L	0.5	0.080	
1,1-Dichloroethene	None Detected	µg/L	0.5	0.075	
cis-1,2-Dichloroethene	None Detected	µg/L	0.5	0.13	
trans-1,2-Dichloroethene	None Detected	µg/L	0.5	0.13	
1,2-Dichloropropane	None Detected	µg/L	0.5	0.074	
1,3-Dichloropropane	None Detected	µg/L	0.5	0.078	
2,2-Dichloropropane	None Detected	µg/L	0.5	0.32	
1,1-Dichloropropene	None Detected	µg/L	0.5	0.072	
cis-1,3-Dichloropropene	None Detected	µg/L	0.5	0.053	
trans-1,3-Dichloropropene	None Detected	µg/L	0.5	0.054	
Ethyl Benzene	0.17	µg/L	0.5	0.051	*02
Hexachlorobutadiene	None Detected	µg/L	0.5	0.073	
Isopropylbenzene	None Detected	µg/L	0.5	0.074	
p-Isopropyltoluene	None Detected	µg/L	0.5	0.064	
Methylene Chloride	0.43	µg/L	1.	0.15	*02
Naphthalene	0.36	µg/L	0.5	0.11	*02
n-Propylbenzene	None Detected	µg/L	0.5	0.059	

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Sample Description: 49311.00.1, BOEING, WWP-1, 01/19/2000 @ 11:00, KEN

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level	
Styrene	None Detected	µg/L	0.5	0.061	
1,1,1,2-Tetrachloroethane	None Detected	µg/L	0.5	0.057	
1,1,2,2-Tetrachloroethane	None Detected	µg/L	0.5	0.094	
Tetrachloroethene	None Detected	µg/L	0.5	0.059	
Toluene	3.6	µg/L	0.5	0.094	
1,2,3-Trichlorobenzene	None Detected	µg/L	0.5	0.12	
1,2,4-Trichlorobenzene	None Detected	µg/L	0.5	0.085	
1,1,1-Trichloroethane	None Detected	µg/L	0.5	0.076	
1,1,2-Trichloroethane	None Detected	µg/L	0.5	0.10	
Trichloroethene	2.0	µg/L	0.5	0.12	
Trichlorofluoromethane	None Detected	µg/L	0.5	0.07	
1,2,3-Trichloropropane	None Detected	µg/L	0.5	0.23	
1,1,2-Trichloro-1,2,2-trifluoroethane	None Detected	µg/L	0.5	0.070	
1,2,4-Trimethylbenzene	0.11	µg/L	0.5	0.062	*02
1,3,5-Trimethylbenzene	None Detected	µg/L	0.5	0.07	
Vinyl Chloride	None Detected	µg/L	0.5	0.050	
Total Xylenes	0.84	µg/L	1.	0.16	*02
Methyl-t-butylether	1.4	µg/L	0.5	0.14	

Quality Control Data

Surrogates	% Recovery	Control Limits
1,2-Dichloroethane-d4	98.	76-114
Toluene-d8	102.	88-110
4-Bromofluorobenzene	99.	86-115

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
*03 = CCV recovery not within method limits.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
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Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1TB

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1 TB
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/24/2000 @ 16:37
Dilution Used: 1

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level	
Benzene	None Detected	µg/L	0.5	0.062	
Bromobenzene	None Detected	µg/L	0.5	0.057	
Bromochloromethane	None Detected	µg/L	0.5	0.095	
Bromodichloromethane	None Detected	µg/L	0.5	0.10	
Bromoform	None Detected	µg/L	0.5	0.079	
Bromomethane	None Detected	µg/L	0.5	0.11	
n-Butylbenzene	None Detected	µg/L	0.5	0.083	
sec-Butylbenzene	None Detected	µg/L	0.5	0.017	
tert-Butylbenzene	None Detected	µg/L	0.5	0.081	
Carbon tetrachloride	None Detected	µg/L	0.5	0.065	
Chlorobenzene	None Detected	µg/L	0.5	0.047	
Chloroethane	None Detected	µg/L	0.5	0.086	
Chloroform	None Detected	µg/L	0.5	0.11	
Chloromethane	None Detected	µg/L	0.5	0.13	
2-Chlorotoluene	None Detected	µg/L	0.5	0.072	
4-Chlorotoluene	None Detected	µg/L	0.5	0.061	
Dibromochloromethane	None Detected	µg/L	0.5	0.056	
1,2-Dibromo-3-Chloropropane	None Detected	µg/L	1.	0.40	
1,2-Dibromoethane	None Detected	µg/L	0.5	0.035	
Dibromomethane	None Detected	µg/L	0.5	0.094	
1,2-Dichlorobenzene	None Detected	µg/L	0.5	0.096	
1,3-Dichlorobenzene	None Detected	µg/L	0.5	0.065	
1,4-Dichlorobenzene	None Detected	µg/L	0.5	0.065	
Dichlorodifluoromethane	None Detected	µg/L	0.5	0.085	*03
1,1-Dichloroethane	None Detected	µg/L	0.5	0.065	
1,2-Dichloroethane	None Detected	µg/L	0.5	0.080	
1,1-Dichloroethene	None Detected	µg/L	0.5	0.075	
cis-1,2-Dichloroethene	None Detected	µg/L	0.5	0.13	
trans-1,2-Dichloroethene	None Detected	µg/L	0.5	0.13	
1,2-Dichloropropane	None Detected	µg/L	0.5	0.074	
1,3-Dichloropropane	None Detected	µg/L	0.5	0.078	
2,2-Dichloropropane	None Detected	µg/L	0.5	0.32	
1,1-Dichloropropene	None Detected	µg/L	0.5	0.072	
cis-1,3-Dichloropropene	None Detected	µg/L	0.5	0.053	
trans-1,3-Dichloropropene	None Detected	µg/L	0.5	0.054	
Ethyl Benzene	None Detected	µg/L	0.5	0.051	
Hexachlorobutadiene	None Detected	µg/L	0.5	0.073	
Isopropylbenzene	None Detected	µg/L	0.5	0.074	
p-Isopropyltoluene	None Detected	µg/L	0.5	0.064	
Methylene Chloride	0.22	µg/L	1.	0.15	*02
Naphthalene	None Detected	µg/L	0.5	0.11	
n-Propylbenzene	None Detected	µg/L	0.5	0.059	

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1TB

Sample Description: 49311.00.1, BOEING, WWP-1 TB, 01/19/2000 @ 11:00, KEN

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level	
Styrene	None Detected	µg/L	0.5	0.061	
1,1,1,2-Tetrachloroethane	None Detected	µg/L	0.5	0.057	
1,1,2,2-Tetrachloroethane	None Detected	µg/L	0.5	0.094	
Tetrachloroethene	None Detected	µg/L	0.5	0.059	
Toluene	None Detected	µg/L	0.5	0.094	
1,2,3-Trichlorobenzene	None Detected	µg/L	0.5	0.12	
1,2,4-Trichlorobenzene	None Detected	µg/L	0.5	0.085	
1,1,1-Trichloroethane	None Detected	µg/L	0.5	0.076	
1,1,2-Trichloroethane	None Detected	µg/L	0.5	0.10	
Trichloroethene	None Detected	µg/L	0.5	0.12	
Trichlorofluoromethane	None Detected	µg/L	0.5	0.07	
1,2,3-Trichloropropane	None Detected	µg/L	0.5	0.23	
1,1,2-Trichloro-1,2,2-trifluoroethane	None Detected	µg/L	0.5	0.070	
1,2,4-Trimethylbenzene	None Detected	µg/L	0.5	0.062	
1,3,5-Trimethylbenzene	None Detected	µg/L	0.5	0.07	
Vinyl Chloride	None Detected	µg/L	0.5	0.050	
Total Xylenes	None Detected	µg/L	1.	0.16	
Methyl-t-butylether	0.17	µg/L	0.5	0.14	*02

Quality Control Data

Surrogates	% Recovery	Control Limits
1,2-Dichloroethane-d4	100.	76-114
Toluene-d8	102.	88-110
4-Bromofluorobenzene	98.	86-115

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
*03 = CCV recovery not within method limits.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/21/2000
Date Analyzed: 01/21/2000 @ 23:59
Dilution Used: 1

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level
Benzene	None Detected	mg/kg	0.005	0.00069
Bromobenzene	None Detected	mg/kg	0.005	0.00056
Bromochloromethane	None Detected	mg/kg	0.005	0.0004
Bromodichloromethane	None Detected	mg/kg	0.005	0.00059
Bromoform	None Detected	mg/kg	0.005	0.00050
Bromomethane	None Detected	mg/kg	0.005	0.0014
n-Butylbenzene	None Detected	mg/kg	0.005	0.0004
sec-Butylbenzene	None Detected	mg/kg	0.005	0.0004
tert-Butylbenzene	None Detected	mg/kg	0.005	0.0004
Carbon tetrachloride	None Detected	mg/kg	0.005	0.0015
Chlorobenzene	None Detected	mg/kg	0.005	0.00052
Chloroethane	None Detected	mg/kg	0.005	0.00096
Chloroform	None Detected	mg/kg	0.005	0.00065
Chloromethane	None Detected	mg/kg	0.005	0.00089
2-Chlorotoluene	None Detected	mg/kg	0.005	0.0003
4-Chlorotoluene	None Detected	mg/kg	0.005	0.0006
Dibromochloromethane	None Detected	mg/kg	0.005	0.00045
1,2-Dibromo-3-Chloropropane	None Detected	mg/kg	0.005	0.0019
1,2-Dibromoethane	None Detected	mg/kg	0.005	0.0003
Dibromomethane	None Detected	mg/kg	0.005	0.0005
1,2-Dichlorobenzene	None Detected	mg/kg	0.005	0.00045
1,3-Dichlorobenzene	None Detected	mg/kg	0.005	0.0005
1,4-Dichlorobenzene	None Detected	mg/kg	0.005	0.00048
Dichlorodifluoromethane	None Detected	mg/kg	0.005	0.0010
1,1-Dichloroethane	None Detected	mg/kg	0.005	0.00078
1,2-Dichloroethane	None Detected	mg/kg	0.005	0.00084
1,1-Dichloroethene	None Detected	mg/kg	0.005	0.0011
cis-1,2-Dichloroethene	None Detected	mg/kg	0.005	0.00067
trans-1,2-Dichloroethene	None Detected	mg/kg	0.005	0.0010
1,2-Dichloropropane	None Detected	mg/kg	0.005	0.00062
1,3-Dichloropropane	None Detected	mg/kg	0.005	0.0005
2,2-Dichloropropane	None Detected	mg/kg	0.005	0.0007
1,1-Dichloropropene	None Detected	mg/kg	0.005	0.0005
cis-1,3-Dichloropropene	None Detected	mg/kg	0.005	0.00060
trans-1,3-Dichloropropene	None Detected	mg/kg	0.005	0.00040
Ethyl Benzene	None Detected	mg/kg	0.005	0.00074
Hexachlorobutadiene	None Detected	mg/kg	0.005	0.0007
Isopropylbenzene	None Detected	mg/kg	0.005	0.0003
p-Isopropyltoluene	None Detected	mg/kg	0.005	0.0003
Methylene Chloride	None Detected	mg/kg	0.01	0.0010
Naphthalene	None Detected	mg/kg	0.005	0.0006
n-Propylbenzene	None Detected	mg/kg	0.005	0.0004

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Sample Description: 49311.00.1, BOEING, SP-1, 01/19/2000 @ 11:00, KEN

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level
Styrene	None Detected	mg/kg	0.005	0.0004
1,1,1,2-Tetrachloroethane	None Detected	mg/kg	0.005	0.00033
1,1,2,2-Tetrachloroethane	None Detected	mg/kg	0.005	0.00066
Tetrachloroethene	None Detected	mg/kg	0.005	0.0008
Toluene	None Detected	mg/kg	0.005	0.00055
1,2,3-Trichlorobenzene	None Detected	mg/kg	0.005	0.0006
1,2,4-Trichlorobenzene	None Detected	mg/kg	0.005	0.0006
1,1,1-Trichloroethane	None Detected	mg/kg	0.005	0.0011
1,1,2-Trichloroethane	None Detected	mg/kg	0.005	0.0006
Trichloroethene	None Detected	mg/kg	0.005	0.00064
Trichlorofluoromethane	None Detected	mg/kg	0.005	0.0012
1,2,3-Trichloropropane	None Detected	mg/kg	0.005	0.00074
1,1,2-Trichloro-1,2,2-trifluoroethane	None Detected	mg/kg	0.005	0.0012
1,2,4-Trimethylbenzene	None Detected	mg/kg	0.005	0.0003
1,3,5-Trimethylbenzene	None Detected	mg/kg	0.005	0.0004
Vinyl Chloride	None Detected	mg/kg	0.005	0.0011
Total Xylenes	None Detected	mg/kg	0.01	0.0016
Methyl-t-butylether	None Detected	mg/kg	0.005	0.0025

Quality Control Data

Surrogates	% Recovery	Control Limits
1,2-Dichloroethane-d4	121.	70-121
Toluene-d8	89.	81-117
4-Bromofluorobenzene	105.	74-121

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/21/2000
Date Analyzed: 01/21/2000 @ 22:43
Dilution Used: 1

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level
Benzene	None Detected	mg/kg	0.005	0.00069
Bromobenzene	None Detected	mg/kg	0.005	0.00056
Bromochloromethane	None Detected	mg/kg	0.005	0.0004
Bromodichloromethane	None Detected	mg/kg	0.005	0.00059
Bromoform	None Detected	mg/kg	0.005	0.00050
Bromomethane	None Detected	mg/kg	0.005	0.0014
n-Butylbenzene	None Detected	mg/kg	0.005	0.0004
sec-Butylbenzene	None Detected	mg/kg	0.005	0.0004
tert-Butylbenzene	None Detected	mg/kg	0.005	0.0004
Carbon tetrachloride	None Detected	mg/kg	0.005	0.0015
Chlorobenzene	None Detected	mg/kg	0.005	0.00052
Chloroethane	None Detected	mg/kg	0.005	0.00096
Chloroform	None Detected	mg/kg	0.005	0.00065
Chloromethane	None Detected	mg/kg	0.005	0.00089
2-Chlorotoluene	None Detected	mg/kg	0.005	0.0003
4-Chlorotoluene	None Detected	mg/kg	0.005	0.0006
Dibromochloromethane	None Detected	mg/kg	0.005	0.00045
1,2-Dibromo-3-Chloropropane	None Detected	mg/kg	0.005	0.0019
1,2-Dibromoethane	None Detected	mg/kg	0.005	0.0003
Dibromomethane	None Detected	mg/kg	0.005	0.0005
1,2-Dichlorobenzene	None Detected	mg/kg	0.005	0.00045
1,3-Dichlorobenzene	None Detected	mg/kg	0.005	0.0005
1,4-Dichlorobenzene	None Detected	mg/kg	0.005	0.00048
Dichlorodifluoromethane	None Detected	mg/kg	0.005	0.0010
1,1-Dichloroethane	None Detected	mg/kg	0.005	0.00078
1,2-Dichloroethane	None Detected	mg/kg	0.005	0.00084
1,1-Dichloroethene	None Detected	mg/kg	0.005	0.0011
cis-1,2-Dichloroethene	None Detected	mg/kg	0.005	0.00067
trans-1,2-Dichloroethene	None Detected	mg/kg	0.005	0.0010
1,2-Dichloropropane	None Detected	mg/kg	0.005	0.00062
1,3-Dichloropropane	None Detected	mg/kg	0.005	0.0005
2,2-Dichloropropane	None Detected	mg/kg	0.005	0.0007
1,1-Dichloropropene	None Detected	mg/kg	0.005	0.0005
cis-1,3-Dichloropropene	None Detected	mg/kg	0.005	0.00060
trans-1,3-Dichloropropene	None Detected	mg/kg	0.005	0.00040
Ethyl Benzene	None Detected	mg/kg	0.005	0.00074
Hexachlorobutadiene	None Detected	mg/kg	0.005	0.0007
Isopropylbenzene	None Detected	mg/kg	0.005	0.0003
p-Isopropyltoluene	None Detected	mg/kg	0.005	0.0003
Methylene Chloride	None Detected	mg/kg	0.01	0.0010
Naphthalene	None Detected	mg/kg	0.005	0.0006
n-Propylbenzene	None Detected	mg/kg	0.005	0.0004

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BC Laboratories, Inc.

Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Sample Description: 49311.00.1, BOEING, SP-2, 01/19/2000 @ 11:00, KEN

Constituents	Analysis Results	Reporting Units	Method P.Q.L.	Method Detection Level
Styrene	None Detected	mg/kg	0.005	0.0004
1,1,1,2-Tetrachloroethane	None Detected	mg/kg	0.005	0.00033
1,1,2,2-Tetrachloroethane	None Detected	mg/kg	0.005	0.00066
Tetrachloroethene	None Detected	mg/kg	0.005	0.0008
Toluene	None Detected	mg/kg	0.005	0.00055
1,2,3-Trichlorobenzene	None Detected	mg/kg	0.005	0.0006
1,2,4-Trichlorobenzene	None Detected	mg/kg	0.005	0.0006
1,1,1-Trichloroethane	None Detected	mg/kg	0.005	0.0011
1,1,2-Trichloroethane	None Detected	mg/kg	0.005	0.0006
Trichloroethene	None Detected	mg/kg	0.005	0.00064
Trichlorofluoromethane	None Detected	mg/kg	0.005	0.0012
1,2,3-Trichloropropane	None Detected	mg/kg	0.005	0.00074
1,1,2-Trichloro-1,2,2-trifluoroethane	None Detected	mg/kg	0.005	0.0012
1,2,4-Trimethylbenzene	None Detected	mg/kg	0.005	0.0003
1,3,5-Trimethylbenzene	None Detected	mg/kg	0.005	0.0004
Vinyl Chloride	None Detected	mg/kg	0.005	0.0011
Total Xylenes	None Detected	mg/kg	0.01	0.0016
Methyl-t-butylether	None Detected	mg/kg	0.005	0.0025

Quality Control Data

Surrogates	% Recovery	Control Limits	
1,2-Dichloroethane-d4	126.	70-121	*21
Toluene-d8	90.	81-117	
4-Bromofluorobenzene	106.	74-121	

Flag Explanations:
*21 = Surrogate recovery not within established limits.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TTLC

Samples Affected: 00-00785-1

Constituents	Method Blank Readings	Units
Total Antimony	<100.	µg/L
Total Arsenic	< 2.	µg/L
Total Barium	<100.	µg/L
Total Beryllium	<10.	µg/L
Total Cadmium	<10.	µg/L
Total Chromium	<10.	µg/L
Total Cobalt	<50.	µg/L
Total Copper	<10.	µg/L
Total Lead	< 5.	µg/L
Total Mercury	< 0.2	µg/L
Total Molybdenum	<50.	µg/L
Total Nickel	<10.	µg/L
Total Selenium	< 2.	µg/L
Total Silver	<10.	µg/L
Total Thallium	< 1.	µg/L
Total Vanadium	<10.	µg/L
Total Zinc	7.2	µg/L

The trace detection for zinc is an estimated value between the MDL and PQL.

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142860

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TTLC

Samples Affected: 00-00785-1

Constituents	QC Sample ID	Sample Result	Sample Duplicate	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Sample R.P.D.	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
Total Antimony	TOTAL-864-1	<100.	<100.	392.8	399.3	400.0	400.0	µg/L	<PQL	2.	20	97.	99.	80 - 12
Total Arsenic	TOTAL-789-1QC	1.460	1.150	20.06	20.25	20.00	20.00	µg/L	<PQL	1.	20	93.	94.	80 - 12
Total Barium	TOTAL-864-1	354.1	363.7	555.9	561.2	200.0	200.0	µg/L	<PQL	1.	20	101.	104.	80 - 12
Total Beryllium	TOTAL-864-1	< 10.	< 10.	196.4	202.1	200.0	200.0	µg/L	<PQL	3.	20	98.	101.	80 - 12
Total Cadmium	TOTAL-864-1	< 10.	< 10.	183.2	188.0	200.0	200.0	µg/L	<PQL	3.	20	93.	95.	80 - 12
Total Chromium	TOTAL-864-1	< 10.	< 10.	200.2	203.5	200.0	200.0	µg/L	<PQL	2.	20	102.	103.	80 - 12
Total Cobalt	TOTAL-864-1	< 50.	< 50.	192.6	196.8	200.0	200.0	µg/L	<PQL	2.	20	97.	99.	80 - 12
Total Copper	TOTAL-864-1	< 10.	< 10.	188.0	191.8	200.0	200.0	µg/L	<PQL	2.	20	98.	100.	80 - 12
Total Lead	TOTAL-789 1	< 5.	< 5.	17.54	17.80	20.00	20.00	µg/L	<PQL	1.	20	88.	89.	80 - 1
Total Mercury	TOTAL-00747-1	< 0.2	< 0.2	1.125	1.023	1.000	1.000	µg/L	<PQL	10.	20	105.	95.	70 - 1
Total Molybdenum	TOTAL-864-1	< 50.	< 50.	206.1	213.2	200.0	200.0	µg/L	<PQL	3.	20	103.	107.	80 - 1
Total Nickel	TOTAL-864-1	< 10.	6.400	396.0	407.7	400.0	400.0	µg/L	<PQL	3.	20	98.	101.	80 - 1
Total Selenium	DISS-647-1	< 2.	< 2.	16.64	17.54	20.00	20.00	µg/L	<PQL	5.	20	84.	88.	80 - 1
Total Silver	TOTAL-864-1	< 10.	< 10.	194.3	194.6	200.0	200.0	µg/L	<PQL	0.	20	98.	98.	80 - 1
Total Thallium	TOTAL-789-1	< 1.	< 1.	23.33	23.25	20.00	20.00	µg/L	<PQL	0.	20	117.	117.	80 - 1
Total Vanadium	TOTAL-864-1	< 10.	< 10.	196.3	199.9	200.0	200.0	µg/L	<PQL	2.	20	98.	100.	80 1
Total Zinc	TOTAL-864-1	21.50	45.20	214.5	241.9	200.0	200.0	µg/L	<PQL	12.	20	97.	110.	80 - 1

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142861

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TTLC

Samples Affected: 00-00785-1

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Total Antimony	TOTAL-LCSW	406.90	400.	µg/L	102.	85 - 115
Total Arsenic	TOTAL-LCSW	21.040	20.	µg/L	105.	80 - 120
Total Barium	TOTAL-LCSW	198.60	200.	µg/L	99.	85 - 115
Total Beryllium	TOTAL-LCSW	202.50	200.	µg/L	101.	85 - 115
Total Cadmium	TOTAL-LCSW	187.70	200.	µg/L	94.	85 - 115
Total Chromium	TOTAL-LCSW	207.70	200.	µg/L	104.	85 - 115
Total Cobalt	TOTAL-LCSW	199.30	200.	µg/L	100.	85 - 115
Total Copper	TOTAL-LCSW	200.00	200.	µg/L	100.	85 - 115
Total Lead	TOTAL-LCSW	20.520	20.	µg/L	103.	80 - 120
Total Mercury	LCSW1-01-2	0.97678	1.0	µg/L	98.	85 - 115
Total Molybdenum	TOTAL-LCSW	208.00	200.	µg/L	104.	85 - 115
Total Nickel	TOTAL-LCSW	406.70	400.	µg/L	102.	85 - 115
Total Selenium	LCSW2-02-0	8.5600	10.	µg/L	86.	85 - 115
Total Silver	TOTAL-LCSW	196.50	200.	µg/L	98.	85 - 115
Total Thallium	TOTAL-LCSW	22.490	20.	µg/L	112.	80 - 120
Total Vanadium	TOTAL-LCSW	199.70	200.	µg/L	100.	85 - 115
Total Zinc	TOTAL-LCSW	208.90	200.	µg/L	104.	85 - 115

Quality Control Officer

Anthony Bonanno

BOE-C6-0142862

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

Constituents	Method Blank Readings	Units
Antimony	< 5.	mg/kg
Arsenic	< 0.5	mg/kg
Barium	< 0.5	mg/kg
Beryllium	< 0.5	mg/kg
Cadmium	< 0.5	mg/kg
Chromium	< 0.5	mg/kg
Cobalt	< 2.5	mg/kg
Copper	< 0.5	mg/kg
Lead	< 2.5	mg/kg
Mercury	< 0.1	mg/kg
Molybdenum	< 2.5	mg/kg
Nickel	< 2.5	mg/kg
Selenium	< 0.5	mg/kg
Silver	< 1.	mg/kg
Thallium	< 5.	mg/kg
Vanadium	< 0.5	mg/kg
Zinc	< 2.5	mg/kg

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	Sample Duplicate	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Sample R.P.D.	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
Antimony	HP-785-2	< 5.	< 5.	30.28	31.00	96.15	96.15	mg/kg	<PQL	2.	20	31.	32.	16 - 119
Arsenic	HP-785-2-X5	2.075	2.536	6.935	6.315	4.808	4.808	mg/kg	<PQL	9.	20	101.	88.	75 - 125
Barium	HP-785-2	116.0	152.7	256.8	227.8	96.15	96.15	mg/kg	27.	12.	20	146.	116.	75 - 125
Beryllium	HP-785-2	0.3558	0.4663	8.736	8.062	9.615	9.615	mg/kg	<PQL	8.	20	87.	80.	75 - 125
Cadmium	HP-785-2	< 0.5	< 0.5	7.712	7.125	9.615	9.615	mg/kg	<PQL	8.	20	70.	72.	75 - 125
Chromium	HP-785-2	3.620	5.058	94.71	86.30	96.15	96.15	mg/kg	33.	9.	20	95.	86.	75 - 125
Cobalt	HP-785-2	< 2.5	1.442	83.85	77.12	96.15	96.15	mg/kg	<PQL	8.	20	86.	79.	75 - 125
Copper	HP-785-2	1.990	2.880	87.74	81.59	96.15	96.15	mg/kg	37.	7.	20	89.	83.	75 - 125
Lead	HP-785-2	7.659	9.894	101.1	92.98	96.15	96.15	mg/kg	<PQL	8.	20	97.	89.	75 - 125
Mercury	00785-2	0.6583	0.4338	1.117	0.8962	0.8333	0.7576	mg/kg	41.	22.	20	55.	31.	85 - 115
Molybdenum	HP-785-2	< 2.5	< 2.5	88.12	81.15	96.15	96.15	mg/kg	<PQL	8.	20	91.	84.	75 - 125
Nickel	HP-785-2	2.817	3.726	78.51	71.83	96.15	96.15	mg/kg	<PQL	9.	20	79.	72.	75 - 125
Selenium	HP-785-2-X5	< 0.5	< 0.5	5.171	4.625	4.808	4.808	mg/kg	<PQL	11.	20	105.	93.	75 - 125
Silver	HP-785-2	< 1.	< 1.	3.774	7.880	9.615	9.615	mg/kg	<PQL	70.	20	43.	86.	75 - 125
Thallium	HP-785-2	< 5.	< 5.	89.62	81.44	96.15	96.15	mg/kg	<PQL	10.	20	94.	85.	75 - 125
Vanadium	HP-785-2	5.490	7.221	88.17	80.34	96.15	96.15	mg/kg	27.	9.	20	86.	78.	75 - 125
Zinc	HP-785-2	13.23	16.54	106.4	96.30	96.15	96.15	mg/kg	22.	10.	20	97.	86.	75 - 125

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

The sample RPDs for barium, chromium, copper, mercury, vanadium, and zinc the spike RPDs for mercury and silver, and the matrix spike recoveries for barium, cadmium, mercury, nickel, and silver are outside QC limits. The sample report is flagged accordingly.

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142865

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Antimony	HP-LCSW1-1	2.1670	2.	mg/L	108.	80 - 120
Arsenic	HP-LCSW-1-	0.11605	0.1000	mg/L	116.	80 - 120
Barium	HP-LCSW1-1	2.0950	2.00	mg/L	105.	80 - 120
Beryllium	HP-LCSW1-1	0.19790	0.2000	mg/L	99.	80 - 120
Cadmium	HP-LCSW1-1	0.18390	0.2000	mg/L	92.	80 - 120
Chromium	HP-LCSW1-1	2.1690	2.	mg/L	108.	80 - 120
Cobalt	HP-LCSW1-1	2.0080	2.	mg/L	100.	80 - 120
Copper	HP-LCSW1-1	2.0040	2.	mg/L	100.	80 - 120
Lead	HP-LCSW1-1	2.2220	2.	mg/L	111.	80 - 120
Mercury	LCSW1-01-2	0.0049338	0.005	mg/L	99.	85 - 115
Molybdenum	HP-LCSW1-1	2.2710	2.	mg/L	114.	80 - 120
Nickel	HP-LCSW1-1	1.8550	2.	mg/L	93.	80 - 120
Selenium	HP-LCSW-1-	0.11455	0.1000	mg/L	115.	80 - 120
Silver	HP-LCSW1-1	0.20950	0.2000	mg/L	105.	80 - 120
Thallium	HP-LCSW1-1	2.0900	2.	mg/L	105.	80 - 120
Vanadium	HP-LCSW1-1	1.9800	2.	mg/L	99.	80 - 120
Zinc	HP-LCSW1-1	2.1400	2.	mg/L	107.	80 - 120

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TPH

Samples Affected: 00-00785-1

Constituents	Method Blank Readings	Units
Total Recoverable Petroleum Hydrocarbons	< 1.0	mg/L

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142867

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TPH

Samples Affected: 00-00785-1

Constituents	QC Sample ID	Sample Result	Sample Duplicate	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Sample R.P.D.	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
Total Recoverable Petroleum Hydrocarbons	781-1	< 1.0	< 1.0					mg/L	<PQL		20			
Total Recoverable Petroleum Hydrocarbons	OFW	< 1.0		4.66	4.76	5.00	5.00	mg/L		2.	20	93.	95.	80 - 120

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TPH

Samples Affected: 00-00785-1

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Total Recoverable Petroleum Hydrocarbons	LCSW	4.81	5.00	mg/L	96.	90 - 110

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142869

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TPH

Samples Affected: 00-00785-2, 00-00785-3

Constituents	Method Blank Readings	Units
Total Recoverable Petroleum Hydrocarbons	<20.	mg/kg

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TPH

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	Sample Duplicate	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Sample R.P.D.	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
Total Recoverable Petroleum Hydrocarbons	843-2	< 20.	< 20.	87.50	87.50	100.00	100.00	mg/kg	<PQL	0.	20	88.	88.	80 - 12

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TPH

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Total Recoverable Petroleum Hydrocarbons	LCSS	86.54	100.00	mg/kg	87.	80 - 120

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8082

Samples Affected: 00-00785-1

Constituents	Method Blank Readings	Units
PCB-1016	< 0.2	µg/L
PCB-1221	< 0.2	µg/L
PCB-1232	< 0.2	µg/L
PCB-1242	< 0.2	µg/L
PCB-1248	< 0.2	µg/L
PCB-1254	< 0.2	µg/L
PCB-1260	< 0.2	µg/L
Total PCB's (Summation)	< 0.2	µg/L
Decachlorobiphenyl	96.	%

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8082

Samples Affected: 00-00785-1

Constituents	QC Sample ID	Sample Result	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
PCB-1260	OFW 1/21	< 0.2	2.607	2.385	2.500	2.500	µg/L	9.	18	104.	95.	57 - 124
Decachlorobiphenyl	MS/MSD									104.	99.	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8082

Samples Affected: 00-00785-1

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
PCB-1260	LCSW	2.485	2.500	µg/L	99.	57 - 124
Decachlorobiphenyl	LCSW				108.	60 - 140

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8082

Samples Affected: 00-00785-2, 00-00785-3

Constituents	Method Blank Readings	Units
PCB-1016	< 0.01	mg/kg
PCB-1221	< 0.01	mg/kg
PCB-1232	< 0.01	mg/kg
PCB-1242	< 0.01	mg/kg
PCB-1248	< 0.01	mg/kg
PCB-1254	< 0.01	mg/kg
PCB-1260	< 0.01	mg/kg
Total PCB's (Summation)	< 0.01	mg/kg
Decachlorobiphenyl	108.	%

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8082

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
PCB-1260	B9 1/24	< 0.01	0.1005	0.0917	0.0836	0.0836	mg/kg	9.	30	120.	110.	59 - 130
Decachlorobiphenyl	MS/MSD									113.	100.	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8082

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
PCB-1260	LCSS	0.0885	0.0836	mg/kg	106.	59 - 130
Decachlorobiphenyl	LCSS				94.	60 - 140

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142878

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

Constituents	Method Blank Readings	Units
Benzene	< 0.5	µg/L
Bromobenzene	< 0.5	µg/L
Bromochloromethane	< 0.5	µg/L
Bromodichloromethane	< 0.5	µg/L
Bromoform	< 0.5	µg/L
Bromomethane	< 0.5	µg/L
n-Butylbenzene	< 0.5	µg/L
sec-Butylbenzene	< 0.5	µg/L
tert-Butylbenzene	< 0.5	µg/L
Carbon tetrachloride	< 0.5	µg/L
Chlorobenzene	< 0.5	µg/L
Chloroethane	< 0.5	µg/L
Chloroform	< 0.5	µg/L
Chloromethane	< 0.5	µg/L
2-Chlorotoluene	< 0.5	µg/L
4-Chlorotoluene	< 0.5	µg/L
Dibromochloromethane	< 0.5	µg/L
1,2-Dibromo-3-Chloropropane	< 1.	µg/L
1,2-Dibromoethane	< 0.5	µg/L
Dibromomethane	< 0.5	µg/L
1,2-Dichlorobenzene	< 0.5	µg/L
1,3-Dichlorobenzene	< 0.5	µg/L
1,4-Dichlorobenzene	< 0.5	µg/L
Dichlorodifluoromethane	< 0.5	µg/L
1,1-Dichloroethane	< 0.5	µg/L
1,2-Dichloroethane	< 0.5	µg/L
1,1-Dichloroethene	< 0.5	µg/L
cis-1,2-Dichloroethene	< 0.5	µg/L
trans-1,2-Dichloroethene	< 0.5	µg/L
1,2-Dichloropropane	< 0.5	µg/L

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

Constituents	Method Blank Readings	Units
1,3-Dichloropropane	< 0.5	µg/L
2,2-Dichloropropane	< 0.5	µg/L
1,1-Dichloropropene	< 0.5	µg/L
cis-1,3-Dichloropropene	< 0.5	µg/L
trans-1,3-Dichloropropene	< 0.5	µg/L
Ethyl Benzene	< 0.5	µg/L
Hexachlorobutadiene	< 0.5	µg/L
Isopropylbenzene	< 0.5	µg/L
p-Isopropyltoluene	< 0.5	µg/L
Methylene Chloride	0.18	µg/L
Naphthalene	< 0.5	µg/L
n-Propylbenzene	< 0.5	µg/L
Styrene	< 0.5	µg/L
1,1,1,2-Tetrachloroethane	< 0.5	µg/L
1,1,2,2-Tetrachloroethane	< 0.5	µg/L
Tetrachloroethene	< 0.5	µg/L
Toluene	< 0.5	µg/L
1,2,3-Trichlorobenzene	< 0.5	µg/L
1,2,4-Trichlorobenzene	< 0.5	µg/L
1,1,1-Trichloroethane	< 0.5	µg/L
1,1,2-Trichloroethane	< 0.5	µg/L
Trichloroethene	< 0.5	µg/L
Trichlorofluoromethane	< 0.5	µg/L
1,2,3-Trichloropropane	< 0.5	µg/L
1,1,2-Trichloro-1,2,2-trifluoroethane	< 0.5	µg/L
1,2,4-Trimethylbenzene	< 0.5	µg/L
1,3,5-Trimethylbenzene	< 0.5	µg/L
Vinyl Chloride	< 0.5	µg/L
Total Xylenes	< 1.	µg/L

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

Constituents	Method Blank Readings	Units
m & p-Xylene	< 0.5	µg/L
o-Xylene	< 0.5	µg/L
Methyl-t-butylether	< 0.5	µg/L
1,2-Dichloroethane-d4	94.	%
Toluene-d8	101.	%
4-Bromofluorobenzene	96.	%

The trace detection for Methylene chloride is an estimated value between the MDL and PQL.

Quality Control Officer

Anthony Bonanno

BOE-C6-0142881

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Benzene	CCV 30	14.04	16.00	µg/L	88.	80 - 120
Bromodichloromethane	CCV 30	16.95	16.00	µg/L	106.	80 - 120
Chlorobenzene	CCV 30	15.72	16.00	µg/L	98.	80 - 120
Chloroethane	CCV 30	14.92	16.00	µg/L	93.	80 - 120
1,4-Dichlorobenzene	CCV 30	15.27	16.00	µg/L	95.	80 - 120
1,1-Dichloroethane	CCV 30	14.71	16.00	µg/L	92.	80 - 120
1,1-Dichloroethene	CCV 30	14.98	16.00	µg/L	94.	80 - 120
Toluene	CCV 30	15.43	16.00	µg/L	96.	80 - 120
Trichloroethene	CCV 30	16.15	16.00	µg/L	101.	80 - 120
1,2-Dichloroethane-d4	CCV 30				100.	76 - 114
Toluene-d8	CCV 30				102.	88 - 110
4-Bromofluorobenzene	CCV 30				98.	86 - 115

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

Constituents	Method Blank Readings	Units
Benzene	< 0.005	mg/kg
Bromobenzene	< 0.005	mg/kg
Bromochloromethane	< 0.005	mg/kg
Bromodichloromethane	< 0.005	mg/kg
Bromoform	< 0.005	mg/kg
Bromomethane	< 0.005	mg/kg
n-Butylbenzene	< 0.005	mg/kg
sec-Butylbenzene	< 0.005	mg/kg
tert-Butylbenzene	< 0.005	mg/kg
Carbon tetrachloride	< 0.005	mg/kg
Chlorobenzene	< 0.005	mg/kg
Chloroethane	< 0.005	mg/kg
Chloroform	< 0.005	mg/kg
Chloromethane	< 0.005	mg/kg
2-Chlorotoluene	< 0.005	mg/kg
4-Chlorotoluene	< 0.005	mg/kg
Dibromochloromethane	< 0.005	mg/kg
1,2-Dibromo-3-Chloropropane	< 0.005	mg/kg
1,2-Dibromoethane	< 0.005	mg/kg
Dibromomethane	< 0.005	mg/kg
1,2-Dichlorobenzene	< 0.005	mg/kg
1,3-Dichlorobenzene	< 0.005	mg/kg
1,4-Dichlorobenzene	< 0.005	mg/kg
Dichlorodifluoromethane	< 0.005	mg/kg
1,1-Dichloroethane	< 0.005	mg/kg
1,2-Dichloroethane	< 0.005	mg/kg
1,1-Dichloroethene	< 0.005	mg/kg
cis-1,2-Dichloroethene	< 0.005	mg/kg
trans-1,2-Dichloroethene	< 0.005	mg/kg
1,2-Dichloropropane	< 0.005	mg/kg

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BOE-C6-0142883

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

Constituents	Method Blank Readings	Units
m & p-Xylene	< 0.005	mg/kg
o-Xylene	< 0.005	mg/kg
Methyl-t-butylether	< 0.005	mg/kg
1,2-Dichloroethane-d4	114.	%
Toluene-d8	93.	%
4-Bromofluorobenzene	103.	%

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
Benzene	447-1	< 5.	81.	79.	80.	80.	µg/kg	2.	20	101.	99.	80 - 120
Bromodichloromethane	447-1	< 5.	75.	74.	80.	80.	µg/kg	1.	20	94.	93.	80 - 120
Chlorobenzene	447-1	< 5.	82.	76.	80.	80.	µg/kg	7.	20	102.	95.	80 - 120
Chloroethane	447-1	< 5.	93.	93.	80.	80.	µg/kg	1.	20	117.	116.	80 - 120
1,4-Dichlorobenzene	447-1	< 5.	84.	78.	80.	80.	µg/kg	8.	20	105.	98.	80 - 120
1,1-Dichloroethane	447-1	< 5.	86.	85.	80.	80.	µg/kg	1.	20	107.	107.	80 - 120
1,1-Dichloroethene	447-1	< 5.	90.	91.	80.	80.	µg/kg	1.	20	112.	114.	80 - 120
Toluene	447-1	< 5.	77.	75.	80.	80.	µg/kg	2.	20	96.	94.	80 - 120
Trichloroethene	447-1	< 5.	82.	81.	80.	80.	µg/kg	1.	20	102.	102.	80 - 120
1,2-Dichloroethane-d4	MS/MSD									96.	97.	76 - 114
Toluene-d8	MS/MSD									96.	97.	88 - 110
4-Bromofluorobenzene	MS/MSD									102.	103.	86 - 115

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Benzene	CCV 24	17.	16.	µg/L	108.	80 - 120
Bromodichloromethane	CCV 24	16.	16.	µg/L	100.	80 - 120
Chlorobenzene	CCV 24	15.	16.	µg/L	97.	80 - 120
Chloroethane	CCV 24	20.	16.	µg/L	124.	80 - 120
1,4-Dichlorobenzene	CCV 24	17.	16.	µg/L	104.	80 - 120
1,1-Dichloroethane	CCV 24	18.	16.	µg/L	115.	80 - 120
1,1-Dichloroethene	CCV 24	19.	16.	µg/L	120.	80 - 120
Toluene	CCV 24	16.	16.	µg/L	97.	80 - 120
Trichloroethene	CCV 24	17.	16.	µg/L	106.	80 - 120
1,2-Dichloroethane-d4	CCV 24				100.	76 - 114
Toluene-d8	CCV 24				95.	88 - 110
4-Bromofluorobenzene	CCV 24				109.	86 - 115

The LCS recovery for Chloroethane is outside QC limits.

Quality Control Officer

Anthony Bonanno

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AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: JAN 19, 2000

PAGE 1 OF 1

AA Client: HARDING LAWSON ASSOCIATES	Phone: (949) 260-1800	Sampler's Name: KEY R. HOLLY	
Project Manager: MARK CLARDY	P.O. No.	Sampler's Signature: [signature]	
Project Name: BRC	Project No. 49311.00.1	Project Manager's Signature	

Job Name and Address: BOEING 00-00785 HARBORGATE, TORRANCE, CA.

ANALYSIS REQUIRED

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Detection Limits / Test Name: 8260	418.1	8082	T.22 CAM	Test Requirements
-1	WWP-1	1-19-00	1100	H2O	5	X	X	X	X	
-2	SP-1	↓	↓	Soil	1	X	X	X	X	
-3	SP-2	↓	↓	↓	1	X	X	X	X	

DISTRIBUTION: MA SH BG Zack SB

NUMBERING CHECKED BY: [signature]

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____	No ____
Samples Properly Cooled	Yes ____	No ____
Samples Accepted	Yes ____	No ____

If Not Why: ____

AA Project No.

Relinquished by:	Date	Time	Received by:
[signature]	1-19-00	12:53	[signature]
[signature]	1-19-2000	1710	[signature]

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

BOE-C6-0142887

APPENDIX C

APPENDIX C
WELL ABANDONMENT PERMIT AND NON-HAZARDOUS WASTE DATA FORMS

APPLICATION FOR WELL PERMIT
ENVIRONMENTAL HEALTH 2525 Corporate Place Monterey Park, Ca 91754
COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES

DATE JANUARY 4, 1999

DESCRIPTION

TYPE OF PERMIT (CHECK)
- ☐ NEW WELL CONSTRUCTION
- ☐ RECONSTRUCTION OR RENOVATION
- ☒ DESTRUCTION

TYPE OF WELL
- ☐ PRIVATE DOMESTIC
- ☐ PUBLIC DOMESTIC
- ☐ IRRIGATION
- ☒ OBSERVATION/MONITORING
- ☐ CATHODIC
- ☐ INDUSTRIAL
- ☐ GRAVEL PACK
- ☐ TEST

TYPE OF CASING

METHOD OF SEALING OF CASING

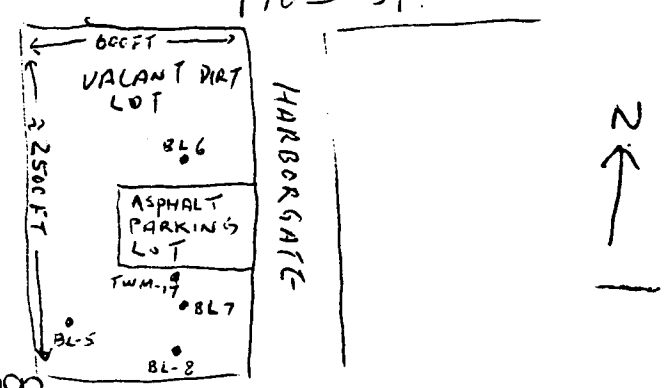
METHOD OF DESTRUCTION
WELLS to BE OVERDRILLED/REMOVED by 8" HSA BACKFILLED W/CEMENT-BENTONITE GROUT FROM T.D to 10bgs, then CONCRETE to SURFACE.

LOCATION

ADDRESS (NUMBER, STREET, AND NEAREST INTERSECTION) 19503 S. NORMANDIE / + 190th STREET 90501 CITY TORRANCE T.G. 763J-3

DIAGRAM (SHOW PROPERTY LINES, STREET, ADDRESS, WELL SITE, SEWERS, AND PRIVATE SEWAGE DISPOSAL SYSTEMS ALONG WITH LABELS AND DIMENSIONS)

See ATTACHED



Five Monitoring Wells Destruction

APPLICANT

NAME OF WELL DRILLER (PRINT) THF DRILLING
TRADE NAME 9431 RESEDA AVENUE
BUSINESS ADDRESS FONTANA, CA. 92335 CITY

NAME OF WELL OWNER (PRINT) BOEING REALTY CORPORATION
MAILING ADDRESS 4060 LAKEVIEW BLVD. 6TH FLOOR
CITY LONG BEACH, CA. 90808

I hereby agree to comply in every respect with all regulations of the County Preventive/Public Health Services and with all ordinances and laws of the County of Los Angeles and of the State of California pertaining to well construction, reconstruction and destruction. Upon completion of well and within ten days thereafter, I will furnish the County Preventive/Public Health Services with a complete log of the well, giving date drilled, depth of well, all perforations in casing, and any other data deemed necessary by such County Preventive/Public Health Services.

?

PRINT NAME

Applicant's Signature

Start Tuesday 1/11/00

DISPOSITION OF APPLICATION: (For Sanitarians Use Only)
- ☒ APPROVED
- ☐ DENIED
- ☐ APPROVED WITH CONDITIONS

If denied or approved with conditions, report reason or conditions here:
Scheduled WORK ON THURSDAY JAN 13, 2000.

ENTERED

DATE	SANITARIAN
DATE JAN 11, 00	SECTION CHIEF Michael Lui

When signed by Section Chief, this application is a permit.

APPLICANT COPY

76A668
H-13 (Rev. 3/91) 2/05

TOTAL P.02

NO. 021500

NON-HAZARDOUS WASTE DATA FORM

TO BE COMPLETED BY GENERATOR

NAME: Boeing Realty Corp. SITE:

MAILING ADDRESS: 4060 Lakewood Blvd. 6th Floor ADDRESS: 19503 S. Normandie

CITY, STATE, ZIP: Long Beach, CA 90808 CITY: Los Angeles, CA 90501

PHONE: ( )

CONTAINERS: NO. 11 VOLUME

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☒ DRUMS ☐ ROLL OFF ☐ OTHER

WASTE DESCRIPTION: Water GENERATING PROCESS: Well Monitoring

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. Water		>99	5.		
2. TPH/BTXE		<.1	6.		
3.			7.		
4.			8.		

PROPERTIES: pH N ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: Wear appropriate protective clothing TPH-335

MIKE PALMER
PRINTED NAME

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS

SIGNATURE 2-16-00 DATE

TRANSPORTER

NAME: Cameron Environmental, Inc.

ADDRESS: 20741 Manhattan Place

CITY, STATE, ZIP: Torrance, CA 90501

PHONE: ( ) 310-212-0610

Enrique L. Serrano
PRINTED NAME

TRUCK, UNIT, I.D. NO.

SIGNATURE DATE

TSD FACILITY

NAME: Crosby & Overton PROFILE NO. 20841

ADDRESS: 1630 W. 17th Street ☐ LANDFILL ☐ OTHER

CITY, STATE, ZIP: Long Beach, CA 90813

PHONE: ( ) 562-432-5445

TONS/GALS REC'D

SIGNATURE DATE

22733

NON-HAZARDOUS WASTE DATA FORM

TO BE COMPLETED BY GENERATOR

NAME: ROEMI REALTY CORPORATION

ADDRESS: 4060 LAKEWOOD BLVD 6TH FLOOR

EPA ID NO:

CITY, STATE, ZIP: LONG BEACH, CA 90808

PHONE NO: 562 627 3200

CONTAINERS: No. 1 VOLUME 10CY WEIGHT

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☐ DRUMS ☐ CARTONS ☑ OTHER ROLL OFF DUMPSTER

WASTE DESCRIPTION: SOLID

GENERATING PROCESS:

COMPONENTS OF WASTE		PPM	%	COMPONENTS OF WASTE		PPM	%
1 Bitumite	≤	30	%	5 ROOFING COMPANY			
2 Sand	≤	7	%	6 1722 S MONTEREY			
3 Soil	≤	7	%	7 LOS ANGELES, CA 90001			
4 Asphalt	≤	2	%	8			

PROPERTIES: pH 7 ☑ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTUCTIONS: [illegible]

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

TYPED OR PRINTED FULL NAME & SIGNATURE: [illegible] DATE: 2/16/00

TRANSPORTER

NAME: CALIFORNIA WASTE TRANSFER

EPA ID NO: CAD 981 686 713

ADDRESS: 1780 SAN GABRIEL AVE

SERVICE ORDER NO: [illegible]

CITY, STATE, ZIP: MONTEBELLO CA 90640

PICK UP DATE: 2/16/00

PHONE NO: 323 724 4645

TRUCK, UNIT, I.D. NO.: [illegible]

TYPED OR PRINTED FULL NAME & SIGNATURE: [illegible] DATE: 2/16/00

TSD FACILITY

NAME: FIRST ENVIRONMENTAL TRANSFER INC.

EPA ID NO: CAD 981 944 981

ADDRESS: 1700 N. MAIN AVE

DISPOSAL METHOD: ☐ LANDFILL ☑ OTHER RECYCLE

CITY, STATE, ZIP: ANAHEIM CA 92806

PHONE NO: 714 934 1620

TYPED OR PRINTED FULL NAME & SIGNATURE: [illegible] DATE:

GEN	OLD/NEW	L	A	TONS
TRANS		S	B	
C/O		RT/CD		HWDF NONE

DISCREPANCY

BOE-C6-0142892