WA 2917
41963 11.3.92
8a

Burlington
Environmental

RCRA PERMIT
ADMINISTRATIVE RECORD
ITEM NUMBER
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FILE COPY

November 3, 1992

Joe Depner
Burlington Environmental Technical Services
7440 West Marginal Way South
Seattle, WA 98108

Project: Pier 91 Drilling, Project #624878

Dear Joe:

Five soil samples for the Pier 91 Drilling Project #624878 were received at our laboratory September 25, 1992. These samples were received in good condition. The samples were analyzed for total metals and PCBs at the Burlington Environmental Corporate Laboratory and Volatiles were anlayzed on the same samples by Analytical Resources Inc (ARI). This ARI sample set (B833) was batched with B858 (Burlington laboratory number 42061). The MS and MSD results from sample set B858 are included here for reference.

All samples were extracted and analyzed within EPA SW-846 required holding times. Analysis dates and extraction dates (as applicable) are included in the metals report and in the report from ARI. The PCBs were extracted and analyzed in batchs. These dates are tabulated below. All PCB surrogates recovered between 50% and 150%.

Laboratory Number(s)	GC Run Number(s)	Date(s) Extracted	Date(s) Analyzed
41963-1 - 41963-5	AAJD through BAJD	10/7/92	10/8/92

All analyses were conducted according to EPA SW-846 Methods specified in the work plan. Additional analytical and quality control information is included in the attached analytical reports.

Sincerely,

Kathy E Kreps

Kathy E. Kreps
Laboratory Manager
Burlington Environmental Inc.

enclosure

USEPA RCRA
3012480

General Laboratory Report

Lab Number : 41963

Plant/Generator Name : Pier 91 Drilling Project #624878
Sample Type : Soils
Date of Receipt : 09/25/92 Analyst: BLW,BB,JLB,DKW
Date of Report : 11/03/92 QC Checked: _____
Parameters for Analysis: Total Metals, PCBs, Volatiles
Outside Lab : ARI Outside Lab Report No: B833

Data:

These five soil samples from the Pier 91 Drilling Project #624878, samples CP-116-2-2.5, CP-117-2-4, CP-117-6-8, CP-119-2-4, and CP-119-6-8 were analyzed for Total Metals and PCBs by the Burlington Environmental Corporate Laboratory and for Volatile Organics by Analytical Resources Inc. Copies of the results are attached.

Comments and Conclusions:

BURLINGTON ENVIRONMENTAL

210 West Sand Bank Road
P.O. Box 330
Columbia, IL 62236-0330
618/281-7173
618/281-5120 FAX

CHAIN-OF-CUSTODY RECORD

C.O.C. SERIAL NO. 6069

PROJECT NAME PIER 91
PROJECT NUMBER 624878 MAJOR TASK
SAMPLERS J. PAMLE
LAB DESTINATION BEI

SAMPLE NO.	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	TYPE OF ANALYSIS: VOC	TOTAL METALS	PCBs					PRESERVATIVES: ICED	CHEMICALS ADDED	REMARKS (CHEMICAL ANALYSIS REQUEST FORM NUMBER IF APPLICABLE)
41963-1	9-23	1330		X	CP-116-2-2.5	2	X	X	X					X		
-2	9-24	905		X	CP-117-2-4	2	X	X	X					X		
-3	9-24	1040		X	CP-117-6-8	2	X	X	X					X		HOLD METALS FOR
-4	9-25	1045		X	CP-119-2-4	2	X	X	X					X		QUANT. LIMITS - CALL
-5	9-25	1200		X	CP-119-6-8	2	X	X	X					X		J. DEPNER 767 3306 FOR
																DETAILS

RELINQUISHED BY SIGNATURE	DATE	TIME	RECEIVED BY SIGNATURE	DATE	TIME
[signature]	9-25	1600	[signature]	9/25/92	1605

SHIPPING NOTES

LAB NOTES

BE-34 (1/92)

PCB Laboratory Report

Lab Number : 41963

Plant/Generator Name : PIER 91 / 624878
Sample Type : SOILS
Date of Receipt : 09/25/92
Date of Report : 10/12/92
Outside Lab :
Number of Samples : 5

Analyst: GCH
QC Checked: 10/12/92
Outside Lab Report No:

Run #	Sample ID	Code Numbers	# Drums in Composite	Aroclor #	Total PCB (ppm)
AAJD59	41963-1	CP-116-2-2.5		1254/1260	1.3
BAJD83	41963-2	CP-117-2-4		1248/1254	1.8
BAJD84	41963-3	CP-117-6-8		1248/1254/1260	0.63
AAJD60	41963-4	CP-119-2-4		1254/1260	1.2
BAJD86	41963-5	CP-119-6-8		1254/1260	0.93
AAJD38	B10072-3	BLANK			<0.1
AAJD30	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.30
AAJD41	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.20
AAJD52	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.75
AAJD63	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.51
BAJD80	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.96
BAJD91	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	5.21

Metals Laboratory Report

Lab Number : 41963

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878
Sample Type : SOILS
Date of Receipt : 09/25/92 Analyst: BLW, BB, JLB
Date of Report : 10/29/92 QC Checked: [illegible] 10/29/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41963-1 CP-116-2-2.5	41963-2 CP-117-2-4	41963-3 CP-117-6-8	41963-4 CP-119-2-4
Silver	<0.45	0.42	<0.39	<0.37
Arsenic	1.9	2.1	1.5	2.2
Barium	24.6	26.2	12.6	18.7
Beryllium	0.23	<0.21	<0.20	0.27
Cadmium	0.96	0.58	0.45	0.25
Chromium	30.6	41.0	28.6	19.8
Copper	15.9	10.3	6.7	10.8
Mercury	<0.020	<0.020	<0.020	<0.020
Nickel	24.9	48.0	41.6	23.4
Lead	122.	81.4	5.3	19.5
Selenium	<0.21	<0.21	<0.21	<0.20
Zinc	99.2	75.5	21.1	20.2
Dry Weight	82.6%	93.3%	90.8%	90.2%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

Metals Laboratory Report

Lab Number : 41963

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878
Sample Type : SOILS
Date of Receipt : 09/25/92 Analyst: BLW, BB, JLB
Date of Report : 10/29/92 QC Checked: [illegible] 10/29/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41963-5 CP-119-6-8	METHOD BLANK IN MG/L
Silver	<0.39	<0.010
Arsenic	1.8	<0.010
Barium	13.0	<0.20
Beryllium	0.23	<0.005
Cadmium	0.21	<0.005
Chromium	12.2	<0.010
Copper	6.1	<0.025
Mercury	<0.020	<0.0002
Nickel	17.7	<0.040
Lead	12.8	<0.050
Selenium	<0.20	<0.005
Zinc	16.7	<0.020
Dry Weight	87.0%	

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
DATES ANALYZED: 10/7/92, 10/12/92, 10/16/92.
Hg ANALYZED ON 10/5/92.

Metals Laboratory Report

Lab Number : 41963Q

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 09/25/92 Analyst: BLW, BB, JLB
Date of Report : 10/29/92 QC Checked: 10/29/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	CONTROL SAMPLE PPS-46	CONTROL SAMPLE % RECOVERY	41963-5 MS % RECOVERY	41963-5 MSD % RECOVERY
Silver	31.8	85.9	72.4	79.9
Arsenic	20.3	135.3	44.8	65.7
Barium	110.	82.1	96.5	97.5
Beryllium	12.5	83.3	91.9	95.3
Cadmium	90.6	83.1	92.8	93.5
Chromium	44.8	109.3	105.7	104.7
Copper	19.3	96.5	104.5	120.6
Mercury	5.07*	84.5	64.4	68.8
Nickel	27.0	96.4	92.3	115.4
Lead	63.8	86.2	78.7	69.6
Selenium	94.5	103.8	38.8	43.5
Zinc	49.3	93.0	103.6	100.5

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
*MERCURY CONTROL SAMPLE WAS SRS003.

Metals Laboratory Report

Lab Number : 41963Q

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 09/25/92 Analyst: BLW, BB, JLB
Date of Report : 10/29/92 QC Checked: 10/29/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	% RECOVERY ICV	ICV	CCV	CCV
Silver	106.0		103.5	98.3
Arsenic	98.1	91.1	105.6	104.8
Barium	96.3		99.4	91.3
Beryllium	96.1		96.0	93.5
Cadmium	94.6		99.9	100.3
Chromium	96.2		100.7	97.3
Copper	96.5		98.8	93.2
Nickel	94.8		99.7	99.8
Lead	93.2		100.1	98.6
Selenium	98.6		95.6	92.0
Zinc	96.6		96.5	95.0

Comments and Conclusions:

RESULTS ARE IN PERCERNT RECOVERY.

Metals Laboratory Report

Lab Number : 41963Q

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 09/25/92 Analyst: BLW, BB, JLB
Date of Report : 10/29/92 QC Checked: 10/29/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	% RECOVERY CCV	CCV
Silver	101.6	
Arsenic	97.6	92.4
Barium	103.2	
Beryllium	101.1	
Cadmium	103.8	
Chromium	105.0	
Copper	99.9	
Nickel	101.7	
Lead	102.7	
Selenium	95.2	94.0
Zinc	97.9	

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

Certificate of Analysis

SOLID WASTE LABORATORY CONTROL SAMPLE

Catalog No: SRS003 Name: Metals on Soil

Lot No: BC003 USE EPA METHOD* 3050

Analysis by EPA* Method 3050

Arsenic (CAS# 1327-53-3)	30 ± 20 PPM
Barium (CAS# 7440-39-3)	575 ± 65 PPM
Cadmium (CAS# 7440-43-9)	1.3 ± 0.7 PPM
Chromium (CAS# 7440-47-3)	12 ± 5 PPM
Mercury (CAS# 7439-97-6)	6 ± 3 PPM

*Test methods for evaluating SW846, Third Edition, 1986

Analytical ranges based on interlab 95% confidence levels.

Results based on a dry weight basis.

Manufactured by Resource Technology Corporation

for exclusive distribution by FISHER SCIENTIFIC.

Fisher Scientific

Chemical Division
1 Reagent Lane
Fair Lawn, N.J. 07410
(201) 796-7100

ENVIRONMENTAL
RESOURCE ASSOCIATES
Arvada, Colorado 80002 1-800-ERA-0122

Certification

PriorityPollutnT™/CLP Quality Control Standards

Inorganics in Soil

Parameter	Lot Number 212 Certified Value mg/kg	Advisory Range mg/kg
TRACE METALS		
aluminum	11500	6530-16500
antimony	52	0-160
arsenic	15	5.6-25
barium	134	93-174
beryllium	15	9.5-21
cadmium	109	76-142
calcium	7130	4990-9270
chromium	41	20-62
cobalt	211	148-274
copper	20	8.0-32
iron	14500	10100-20150
lead	74	37-111
magnesium	3620	2530-4710
manganese	310	217-403
mercury	31	15-46
molybdenum	16	8.0-24
nickel	28	8.0-48
potassium	3790	2650-4930
selenium	91	45-136
silver	37	18-56
sodium	400	173-627
thallium	99	48-150
vanadium	57	40-74
zinc	53	26-80
CYANIDE	147	74-220

27 October 1992

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

Kathy Kreps
Burlington Environmental
2203 Airport Way South
Suite 400
Seattle, WA 98134

RE: Client Project: Pier 91;
ARI Job #B833

Dear Kathy:

Please find enclosed the results for the above referenced project. Your samples were received in good condition with no discrepancies in the paperwork. Analysis proceeded without incident.

All raw data and a copy of this report will be kept on file by ARI should you need any further information regarding this project.

If you have any questions, please feel free to contact me at any time. You can reach me directly by calling 340-2866, ext. #118.

Sincerely,

ANALYTICAL RESOURCES, INC.

Suzanne Kitch

Suzanne Kitch
Project Coordinator

enclosures

cc: file B833

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0930
Matrix: Soils/Sediments

Data Release Authorized:
Report: 10/26/92 MAC:ctr

Sample: Method Blank

QC Report No: B833-Burlington Env.
Project: Pier 91

VTSR: NA

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	Methylene Chloride	200 U
67-64-1	Acetone	500 U
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	2-Butanone	500 U
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	Toluene	100 U
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	Total Xylenes	200 U
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	100%
Bromofluorobenzene	99.1%
d4-1,2-Dichloroethane	90.4%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL
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Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB1001
Matrix: Soils/Sediments

Data Release Authorized:
Report: 10/26/92 MAC:ctr

Sample: Method Blank

QC Report No: B833-Burlington Env.
Project: Pier 91

VTSR: NA

Instrument: FINN 1
Date Analyzed: 10/01/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	Methylene Chloride	200 U
67-64-1	Acetone	500 U
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	2-Butanone	500 U
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	Toluene	100 U
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	Total Xylenes	200 U
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	99.8%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	94.5%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

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M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB21001
Matrix: Soils/Sediments

Data Release Authorized:
Report: 10/26/92 MAC:ctr

Sample: Methanol Blank

QC Report No: B833-Burlington Env.
Project: Pier 91

VTSR: NA

Instrument: FINN 1
Date Analyzed: 10/01/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	**Methylene Chloride**	**610**
67-64-1	Acetone	500 U
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	2-Butanone	500 U
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	Toluene	100 U
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	Total Xylenes	200 U
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	114%
Bromofluorobenzene	119%
d4-1,2-Dichloroethane	111%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B833A2
Matrix: Soils/Sediments

Data Release Authorized:
Report: 10/26/92 MAC:ctr

Sample: 41963-1

QC Report No: B833-Burlington Env.
Project: Pier 91

VTSR: 09/28/92

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.034 gm (Dry Weight)
Percent Moisture: 17.4%

CAS Number		µg/Kg
74-87-3	Chloromethane	290 U
74-83-9	Bromomethane	290 U
75-01-4	Vinyl Chloride	290 U
75-00-3	Chloroethane	290 U
75-09-2	**Methylene Chloride**	**1900**
67-64-1	Acetone	740 U
75-15-0	Carbon Disulfide	150 U
75-35-4	1,1-Dichloroethene	150 U
75-34-3	1,1-Dichloroethane	150 U
156-60-5	Trans-1,2-Dichloroethene	150 U
156-59-2	Cis-1,2-Dichloroethene	150 U
67-66-3	Chloroform	150 U
107-06-2	1,2-Dichloroethane	150 U
78-93-3	2-Butanone	740 U
71-55-6	1,1,1-Trichloroethane	150 U
56-23-5	Carbon Tetrachloride	150 U
108-05-4	Vinyl Acetate	150 U
75-27-4	Bromodichloromethane	150 U
78-87-5	1,2-Dichloropropane	150 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	150 U
79-01-6	Trichloroethene	150 U
124-48-1	Dibromochloromethane	150 U
79-00-5	1,1,2-Trichloroethane	150 U
71-43-2	Benzene	150 U
10061-02-6	trans-1,3-Dichloropropene	150 U
110-75-8	2-Chloroethylvinylether	150 U
75-25-2	Bromoform	150 U
108-10-1	4-Methyl-2-Pentanone	740 U
591-78-6	2-Hexanone	740 U
127-18-4	Tetrachloroethene	100 U
79-34-5	1,1,2,2-Tetrachloroethane	150 U
108-88-3	**Toluene**	**440**
108-90-7	Chlorobenzene	150 U
100-41-4	**Ethylbenzene**	**1600**
100-42-5	Styrene	150 U
1330-20-7	**Total Xylenes**	**11000**
75-69-4	Trichlorofluoromethane	290 U
76-13-1	1,1,2-Trichlorotrifluoroethane	290 U

Surrogate Recoveries

d8-Toluene	93.0%
Bromofluorobenzene	85.0%
d4-1,2-Dichloroethane	84.8%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B833B
Matrix: Soils/Sediments

Sample: 41963-2

QC Report No: B833-Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 10/26/92 MAC:ctr

VTSR: 09/28/92

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.037 gm (Dry Weight)
Percent Moisture: 8.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	270 U
74-83-9	Bromomethane	270 U
75-01-4	Vinyl Chloride	270 U
75-00-3	Chloroethane	270 U
75-09-2	**Methylene Chloride**	**4400**
67-64-1	Acetone	680 U
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	140 U
75-34-3	1,1-Dichloroethane	140 U
156-60-5	Trans-1,2-Dichloroethene	140 U
156-59-2	Cis-1,2-Dichloroethene	140 U
67-66-3	Chloroform	140 U
107-06-2	1,2-Dichloroethane	140 U
78-93-3	2-Butanone	680 U
71-55-6	1,1,1-Trichloroethane	140 U
56-23-5	Carbon Tetrachloride	140 U
108-05-4	Vinyl Acetate	140 U
75-27-4	Bromodichloromethane	140 U
78-87-5	1,2-Dichloropropane	140 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	140 U
79-01-6	Trichloroethene	140 U
124-48-1	Dibromochloromethane	140 U
79-00-5	1,1,2-Trichloroethane	140 U
71-43-2	Benzene	140 U
10061-02-6	trans-1,3-Dichloropropene	140 U
110-75-8	2-Chloroethylvinylether	140 U
75-25-2	Bromoform	140 U
108-10-1	4-Methyl-2-Pentanone	680 U
591-78-6	2-Hexanone	680 U
127-18-4	Tetrachloroethene	95 U
79-34-5	1,1,2,2-Tetrachloroethane	140 U
108-88-3	**Toluene**	**24000**
108-90-7	Chlorobenzene	140 U
100-41-4	**Ethylbenzene**	**13000**
100-42-5	Styrene	140 U
1330-20-7	**Total Xylenes**	**29000**
75-69-4	Trichlorofluoromethane	270 U
76-13-1	1,1,2-Trichlorotrifluoroethane	270 U

Surrogate Recoveries

d8-Toluene	97.3%
Bromofluorobenzene	90.6%
d4-1,2-Dichloroethane	87.8%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B833C
Matrix: Soils/Sediments

Sample: 41963-3

QC Report No: B833-Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 10/27/92 MAC:ctr

VTSR: 09/28/92

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.035 gm (Dry Weight)
Percent Moisture: 15.1%

CAS Number		µg/Kg
74-87-3	*Chloromethane*	*290 U*
74-83-9	*Bromomethane*	*290 U*
75-01-4	*Vinyl Chloride*	*290 U*
75-00-3	*Chloroethane*	*290 U*
75-09-2	**Methylene Chloride**	**5500**
67-64-1	**Acetone**	**640 J**
75-15-0	*Carbon Disulfide*	*140 U*
75-35-4	*1,1-Dichloroethene*	*140 U*
75-34-3	**1,1-Dichloroethane**	**150 M**
156-60-5	*Trans-1,2-Dichloroethene*	*140 U*
156-59-2	**Cis-1,2-Dichloroethene**	**260**
67-66-3	*Chloroform*	*140 U*
107-06-2	*1,2-Dichloroethane*	*140 U*
78-93-3	*2-Butanone*	*710 U*
71-55-6	**1,1,1-Trichloroethane**	**300**
56-23-5	*Carbon Tetrachloride*	*140 U*
108-05-4	*Vinyl Acetate*	*140 U*
75-27-4	*Bromodichloromethane*	*140 U*
78-87-5	*1,2-Dichloropropane*	*140 U*

CAS Number		µg/Kg
10061-01-5	*cis-1,3-Dichloropropene*	*140 U*
79-01-6	*Trichloroethene*	*140 U*
124-48-1	*Dibromochloromethane*	*140 U*
79-00-5	*1,1,2-Trichloroethane*	*140 U*
71-43-2	**Benzene**	**160**
10061-02-6	*trans-1,3-Dichloropropene*	*140 U*
110-75-8	*2-Chloroethylvinylether*	*140 U*
75-25-2	*Bromoform*	*140 U*
108-10-1	*4-Methyl-2-Pentanone*	*710 U*
591-78-6	*2-Hexanone*	*710 U*
127-18-4	**Tetrachloroethene**	**800**
79-34-5	*1,1,2,2-Tetrachloroethane*	*140 U*
108-88-3	**Toluene**	**65000 K**
108-90-7	*Chlorobenzene*	*140 U*
100-41-4	**Ethylbenzene**	**290000 K**
100-42-5	*Styrene*	*16000 UJ*
1330-20-7	**Total Xylenes**	**440000 K**
75-69-4	*Trichlorofluoromethane*	*290 U*
76-13-1	**1,1,2-Trichlorotrifluoroethane**	**740**

Surrogate Recoveries

d8-Toluene	82.1%
Bromofluorobenzene	85.3%
d4-1,2-Dichloroethane	82.4%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B833C2
Matrix: Soils/Sediments

Sample: 41963-3
Re-analysis
QC Report No: B833-Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 10/26/92 MAC:ctr

VTSR: 09/28/92

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.00035 gm (Dry Weight)
Percent Moisture: 15.1%

CAS Number		µg/Kg
74-87-3	Chloromethane	29000 U
74-83-9	Bromomethane	29000 U
75-01-4	Vinyl Chloride	29000 U
75-00-3	Chloroethane	29000 U
75-09-2	**Methylene Chloride**	**45000**
67-64-1	Acetone	71000 U
75-15-0	Carbon Disulfide	14000 U
75-35-4	1,1-Dichloroethene	14000 U
75-34-3	1,1-Dichloroethane	14000 U
156-60-5	Trans-1,2-Dichloroethene	14000 U
156-59-2	Cis-1,2-Dichloroethene	14000 U
67-66-3	Chloroform	14000 U
107-06-2	1,2-Dichloroethane	14000 U
78-93-3	2-Butanone	71000 U
71-55-6	1,1,1-Trichloroethane	14000 U
56-23-5	Carbon Tetrachloride	14000 U
108-05-4	Vinyl Acetate	14000 U
75-27-4	Bromodichloromethane	14000 U
78-87-5	1,2-Dichloropropane	14000 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	14000 U
79-01-6	Trichloroethene	14000 U
124-48-1	Dibromochloromethane	14000 U
79-00-5	1,1,2-Trichloroethane	14000 U
71-43-2	Benzene	14000 U
10061-02-6	trans-1,3-Dichloropropene	14000 U
110-75-8	2-Chloroethylvinylether	14000 U
75-25-2	Bromoform	14000 U
108-10-1	4-Methyl-2-Pentanone	71000 U
591-78-6	2-Hexanone	71000 U
127-18-4	Tetrachloroethene	10000 U
79-34-5	1,1,2,2-Tetrachloroethane	14000 U
108-88-3	**Toluene**	**120000**
108-90-7	Chlorobenzene	14000 U
100-41-4	**Ethylbenzene**	**600000**
100-42-5	Styrene	14000 U
1330-20-7	**Total Xylenes**	**1500000**
75-69-4	Trichlorofluoromethane	29000 U
76-13-1	1,1,2-Trichlorotrifluoroethane	29000 U

Surrogate Recoveries

d8-Toluene	98.8%
Bromofluorobenzene	92.1%
d4-1,2-Dichloroethane	91.4%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B833D
Matrix: Soils/Sediments

Sample: 41963-4

QC Report No: B833-Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 10/26/92 MAC:ctr

VTSR: 09/28/92

Instrument: FINN 1
Date Analyzed: 10/01/92

Amount Analyzed: 0.032 gm (Dry Weight)
Percent Moisture: 22.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	310 U
74-83-9	Bromomethane	310 U
75-01-4	Vinyl Chloride	310 U
75-00-3	Chloroethane	310 U
75-09-2	**Methylene Chloride**	**11000 B**
67-64-1	**Acetone**	**1100**
75-15-0	**Carbon Disulfide**	**170 M**
75-35-4	1,1-Dichloroethene	160 U
75-34-3	1,1-Dichloroethane	160 U
156-60-5	Trans-1,2-Dichloroethene	160 U
156-59-2	Cis-1,2-Dichloroethene	160 U
67-66-3	Chloroform	160 U
107-06-2	1,2-Dichloroethane	160 U
78-93-3	2-Butanone	780 U
71-55-6	1,1,1-Trichloroethane	160 U
56-23-5	Carbon Tetrachloride	160 U
108-05-4	Vinyl Acetate	160 U
75-27-4	Bromodichloromethane	160 U
78-87-5	1,2-Dichloropropane	160 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	160 U
79-01-6	Trichloroethene	160 U
124-48-1	Dibromochloromethane	160 U
79-00-5	1,1,2-Trichloroethane	160 U
71-43-2	**Benzene**	**320**
10061-02-6	trans-1,3-Dichloropropene	160 U
110-75-8	2-Chloroethylvinylether	160 U
75-25-2	Bromoform	160 U
108-10-1	4-Methyl-2-Pentanone	780 U
591-78-6	2-Hexanone	780 U
127-18-4	Tetrachloroethene	110 U
79-34-5	1,1,2,2-Tetrachloroethane	160 U
108-88-3	**Toluene**	**2500**
108-90-7	Chlorobenzene	160 U
100-41-4	**Ethylbenzene**	**5400**
100-42-5	Styrene	300 UJ
1330-20-7	**Total Xylenes**	**24000**
75-69-4	Trichlorofluoromethane	310 U
76-13-1	1,1,2-Trichlorotrifluoroethane	310 U

Surrogate Recoveries

d8-Toluene	89.4%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	88.5%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B833E
Matrix: Soils/Sediments

Sample: 41963-5

QC Report No: B833-Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 10/26/92 MAC:ctr

VTSR: 09/28/92

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.033 gm (Dry Weight)
Percent Moisture: 19.5%

CAS Number		µg/Kg
74-87-3	Chloromethane	300 U
74-83-9	Bromomethane	300 U
75-01-4	Vinyl Chloride	300 U
75-00-3	Chloroethane	300 U
75-09-2	**Methylene Chloride**	**960 M**
67-64-1	Acetone	760 U
75-15-0	Carbon Disulfide	150 U
75-35-4	1,1-Dichloroethene	150 U
75-34-3	**1,1-Dichloroethane**	**170 M**
156-60-5	Trans-1,2-Dichloroethene	150 U
156-59-2	Cis-1,2-Dichloroethene	150 U
67-66-3	Chloroform	150 U
107-06-2	1,2-Dichloroethane	150 U
78-93-3	2-Butanone	760 U
71-55-6	1,1,1-Trichloroethane	150 U
56-23-5	Carbon Tetrachloride	150 U
108-05-4	Vinyl Acetate	150 U
75-27-4	Bromodichloromethane	150 U
78-87-5	1,2-Dichloropropane	150 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	150 U
79-01-6	Trichloroethene	150 U
124-48-1	Dibromochloromethane	150 U
79-00-5	1,1,2-Trichloroethane	150 U
71-43-2	**Benzene**	**400**
10061-02-6	trans-1,3-Dichloropropene	150 U
110-75-8	2-Chloroethylvinylether	150 U
75-25-2	Bromoform	150 U
108-10-1	4-Methyl-2-Pentanone	760 U
591-78-6	2-Hexanone	760 U
127-18-4	**Tetrachloroethene**	**170 M**
79-34-5	1,1,2,2-Tetrachloroethane	150 U
108-88-3	**Toluene**	**5000**
108-90-7	Chlorobenzene	150 U
100-41-4	**Ethylbenzene**	**3700**
100-42-5	Styrene	230 UJ
1330-20-7	**Total Xylenes**	**14000**
75-69-4	Trichlorofluoromethane	300 U
76-13-1	**1,1,2-Trichlorotrifluoroethane**	**770**

Surrogate Recoveries

d8-Toluene	88.9%
Bromofluorobenzene	108%
d4-1,2-Dichloroethane	84.7%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B858B
Matrix: Soils/Sediments

Sample: 42061-2

QC Report No: B858 - Burlington Env.
Project: 624878
Pier 91
VTSR: 10/01/92

Data Release Authorized:
Report: 10/27/92 MAC:X]]r

Instrument: FINN 1
Date Analyzed: 10/02/92

Amount Analyzed: 0.036 gm (Dry Weight)
Percent Moisture: 13.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	280 U
74-83-9	Bromomethane	280 U
75-01-4	Vinyl Chloride	280 U
75-00-3	Chloroethane	280 U
75-09-2	Methylene Chloride	370 B
67-64-1	Acetone	690 U
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	140 U
75-34-3	1,1-Dichloroethane	350
156-60-5	Trans-1,2-Dichloroethene	140 U
156-59-2	Cis-1,2-Dichloroethene	140 U
67-66-3	Chloroform	140 U
107-06-2	1,2-Dichloroethane	140 U
78-93-3	2-Butanone	2900 UJ
71-55-6	1,1,1-Trichloroethane	140 U
56-23-5	Carbon Tetrachloride	140 U
108-05-4	Vinyl Acetate	140 U
75-27-4	Bromodichloromethane	140 U
78-87-5	1,2-Dichloropropane	140 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	140 U
79-01-6	Trichloroethene	140 U
124-48-1	Dibromochloromethane	140 U
79-00-5	1,1,2-Trichloroethane	140 U
71-43-2	Benzene	320
10061-02-6	trans-1,3-Dichloropropene	140 U
110-75-8	2-Chloroethylvinylether	140 U
75-25-2	Bromoform	140 U
108-10-1	4-Methyl-2-Pentanone	690 U
591-78-6	2-Hexanone	690 U
127-18-4	Tetrachloroethene	740
79-34-5	1,1,2,2-Tetrachloroethane	140 U
108-88-3	Toluene	9500
108-90-7	Chlorobenzene	280 UJ
100-41-4	Ethylbenzene	2900
100-42-5	Styrene	420 UJ
1330-20-7	Total Xylenes	20000
75-69-4	Trichlorofluoromethane	280 U
76-13-1	1,1,2-Trichlorotrifluoroethane	950

Surrogate Recoveries

d8-Toluene	84.4%
Bromofluorobenzene	90.7%
d4-1,2-Dichloroethane	84.1%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B858Bms
Matrix: Soils/Sediments

Sample: 42061-2
Matrix Spike
QC Report No: B858 - Burlington Env.
Project: 624878
Pier 91
VTSR: 10/01/92

Data Release Authorized:
Report: 10/27/92 MAC:X jjr

Instrument: FINN 1
Date Analyzed: 10/02/92

Amount Analyzed: 0.034 gm (Dry Weight)
Percent Moisture: 13.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	290 U
74-83-9	Bromomethane	290 U
75-01-4	Vinyl Chloride	290 U
75-00-3	Chloroethane	290 U
75-09-2	Methylene Chloride	290 U
67-64-1	Acetone	730 U
75-15-0	Carbon Disulfide	150 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	270
156-60-5	Trans-1,2-Dichloroethene	150 U
156-59-2	Cis-1,2-Dichloroethene	150 U
67-66-3	Chloroform	150 U
107-06-2	1,2-Dichloroethane	150 U
78-93-3	2-Butanone	1800 UJ
71-55-6	1,1,1-Trichloroethane	150 U
56-23-5	Carbon Tetrachloride	150 U
108-05-4	Vinyl Acetate	150 U
75-27-4	Bromodichloromethane	150 U
78-87-5	1,2-Dichloropropane	150 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	150 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	150 U
79-00-5	1,1,2-Trichloroethane	150 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	150 U
110-75-8	2-Chloroethylvinylether	150 U
75-25-2	Bromoform	150 U
108-10-1	4-Methyl-2-Pentanone	730 U
591-78-6	2-Hexanone	730 U
127-18-4	Tetrachloroethene	890
79-34-5	1,1,2,2-Tetrachloroethane	150 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	2500
100-42-5	Styrene	440 UJ
1330-20-7	Total Xylenes	18000
75-69-4	Trichlorofluoromethane	290 U
76-13-1	1,1,2-Trichlorotrifluoroethane	700

Surrogate Recoveries

d8-Toluene	86.1%
Bromofluorobenzene	93.1%
d4-1,2-Dichloroethane	84.9%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B858Bmsd
Matrix: Soils/Sediments

Sample: 42061-2
Matrix Spike Dup.
QC Report No: B858 - Burlington Env.
Project: 624878
Pier 91
VTSR: 10/01/92

Data Release Authorized:
Report: 10/27/92 MAC:X jjr

Instrument: FINN 1
Date Analyzed: 10/02/92

Amount Analyzed: 0.036 gm (Dry Weight)
Percent Moisture: 13.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	280 U
74-83-9	Bromomethane	280 U
75-01-4	Vinyl Chloride	280 U
75-00-3	Chloroethane	280 U
75-09-2	Methylene Chloride	450 B
67-64-1	Acetone	700 U
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	320
156-60-5	Trans-1,2-Dichloroethene	140 U
156-59-2	Cis-1,2-Dichloroethene	140 U
67-66-3	Chloroform	140 U
107-06-2	1,2-Dichloroethane	140 U
78-93-3	2-Butanone	2500 UJ
71-55-6	1,1,1-Trichloroethane	140 U
56-23-5	Carbon Tetrachloride	140 U
108-05-4	Vinyl Acetate	140 U
75-27-4	Bromodichloromethane	140 U
78-87-5	1,2-Dichloropropane	140 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	140 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	140 U
79-00-5	1,1,2-Trichloroethane	140 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	140 U
110-75-8	2-Chloroethylvinylether	140 U
75-25-2	Bromoform	140 U
108-10-1	4-Methyl-2-Pentanone	700 U
591-78-6	2-Hexanone	700 U
127-18-4	Tetrachloroethene	790
79-34-5	1,1,2,2-Tetrachloroethane	140 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	2700
100-42-5	Styrene	420 UJ
1330-20-7	Total Xylenes	19000
75-69-4	Trichlorofluoromethane	280 U
76-13-1	1,1,2-Trichlorotrifluoroethane	870

Surrogate Recoveries

d8-Toluene	85.1%
Bromofluorobenzene	91.5%
d4-1,2-Dichloroethane	85.7%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B858

Client: Burlington Env.
Project: 624878

Sample No: 42061-2

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONC (µg/Kg)	MS CONC (µg/Kg)	MS % REC	QC LIMITS REC
1,1-Dichloroethene	7350	0	11000	150	59-172
Trichloroethene	7350	0	8280	113	62-137
Benzene	7350	324	8490	111	66-142
Toluene	7350	9490	16400	94.0	59-139
Chlorobenzene	7350	0	8490	116	60-133

COMPOUND	SPIKE ADDED (µg/Kg)	MSD CONC (µg/Kg)	MSD % REC	% RPD	Q C LIMITS RPD	Q C LIMITS REC
1,1-Dichloroethene	6940	10000	144	4.1	22	59-172
Trichloroethene	6940	7700	111	1.8	24	62-137
Benzene	6940	8040	111	0.0	21	66-142
Toluene	6940	16400	99.6	-5.8	21	59-139
Chlorobenzene	6940	7760	112	3.5	21	60-133

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Asterisked values outside QC Limits

Comments: *QC Limits taken from CLP OLM01.6 (June 1991)*

DBP

Report prepared: *10/27/92 MACX Jr*

FORM III VOA-2

BURLINGTON ENVIRONMENTAL
2203 Airport Way South, Suite 400
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE _____ PAGE _____ OF _____

PROJECT P91 #
CLIENT INFO. CONTACT K. Kreps
CHEMPRO DIVISION/GENERATOR NAME
TELEPHONE # 223-7797
SAMPLERS NAME PHONE #
SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	PCB's 608/8080	TPH (circle method) 418.1 or 8015	BETX (circle method) 8240 or 8020	F-LISTED SOLVENTS 8240	TCLP F-LISTED SOLVENTS 1311/8240	TCLP METALS D004-11	METALS (TOTAL) As, Ba, Cd, Cr, Cu, Pb, Ni, Hg, Ag, Se, Tl, Sb, Zn	TCLP ORGANICS (specify methods) • VOA's 8240 • BNA's 8270 • Pesticides 8080 • Herbicides 8150	DISCHARGE TESTING	OTHER (Specify)						NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1 CP-116-2-2.5	9-23	1330	41963-1	soil		X																1	
2 CP-117-2-4	9-24	905	41963-2	soil		X																1	
3 CP-117-6-8	9-24	1040	41963-3	soil		X																1	
4 CP-119-2-4	9-25	1045	41963-4	soil		X																1	
5 CP-119-6-8	9-25	1200	41963-5	soil		X																1	
6.																							
7.																							
8.																							

Relinquished By	Relinquished By	Relinquished By
Signature T. Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 9-28-92 mim	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By	**Received By**	**Received By**
Signature Shelby Miller	Signature	Signature
Printed Name Shelby Miller	Printed Name	Printed Name
Firm ARI	Firm	Firm
Date/Time 9/28/92 12:30 (pm)	Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

low level

cooler temp 18°C

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

(LAB-200 Rev. 10/90)

BURLINGTON ENVIRONMENTAL
2203 Airport Way South, Suite 400
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE _____ PAGE _____ OF _____

PROJECT P91 # _____
CLIENT INFO. CONTACT K. Kreps
CHEMPRO DIVISION/GENERATOR NAME _____
TELEPHONE # 223-7797
SAMPLERS NAME _____ PHONE # _____
SAMPLERS SIGNATURE _____

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	PCB's 608/8080	TPH (circle method) 418.1 or 8015	BETX (circle method) 8240 or 8020	F-LISTED SOLVENTS 8240	TCLP F-LISTED SOLVENTS 1311/8240	TCLP METALS D004-11	METALS (TOTAL) As, Ba, Cd, Cr, Cu, Pb, Ni, Hg, Ag, Se, Tl, Sb, Zn	TCLP ORGANICS (specify methods) • VOA's 8240 • BNA's 8270 • Pesticides 8080 • Herbicides 8150	DISCHARGE TESTING	OTHER (Specify)						NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. CP-116-2-2.5	9-23	1330	41963-1	soil		X																1	
2. CP-117-2-4	9-24	905	41963-2	soil		X																1	
3. CP-117-6-8	9-24	1040	41963-3	soil		X																1	
4. CP-119-2-4	9-25	1045	41963-4	soil		X																1	
5. CP-119-6-8	9-25	1200	41963-5	soil		X																1	
6.																							
7.																							
8.																							

Relinquished By	Relinquished By	Relinquished By
Signature T. Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 9-28-92	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By	**Received By**	**Received By**
Signature	Signature	Signature
Printed Name	Printed Name	Printed Name
Firm	Firm	Firm
Date/Time	Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

low level

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

(LAB-200 Rev. 10/90)

Client: Burlington Env.	Project #:	
	Project: P91	
Client Contact: Kathy Krepp	PO#:	Logged In by: Shelley

Sample Acknowledgement

Page 1 of 1

ARI Job Number: B833	
VTSR: 9/28/92	Turn-Around: 10/28/92
	Requested TA:

Billing Address: Burl. Env.

Date of Transmittal: 9/30/92 Time: 9:18

Addressee: Kathy Krepp Fax No: #19

Company: Burlington Env. Phone No:

Analytical Resources, Inc.
(206) 621-6490
(206) 621-7523 - fax

Following is a list of samples received and logged in at ARI.
Please verify information listed.
If there are discrepancies, contact ARI Lab Contact.

ARI Lab Contact: Suzanne Kitch
(Please call this person with questions.)

	SMO/CLIENT SAMPLE ID:	ARI ID NO	Sample Matrix	#Bottles per sample
1	41963-1	A	Soil	2-oz. gl.
2	-2	B		
3	-3	C		
4	-4	D		
5	-5	E		
6				
7				
8				
9				
10				

NO Samples	Matrix	Parameter	Meth No	Estimated Cost Per Sample	Estimated Extended Costs
5	Soil	VOA	8240	225.00	1,125.00
				TOTAL	$1,125.00

THIS IS NOT AN INVOICE

ARI 06/1/90

NOTE Unless arrangements for storage/archiving are made for this project, water samples will be disposed of 60 days (VOA waters 30 day's) after sample receipt. (Opened volatile waters will be disposed of after analysis). Soil samples will be disposed of 90 days after sample receipt (VOA soils will be 60 days).

4·858

Burlington
Environmental

November 3, 1992

Joe Depner
Burlington Environmental Technical Services
7440 West Marginal Way South
Seattle, WA 98108

Project: Pier 91 Drilling, Project #624878

Dear Joe:

Six soil samples for the Pier 91 Drilling Project #624878 were received at our laboratory September 22, 1992. These samples were received in good condition. The samples were analyzed for total metals and PCBs at the Burlington Environmental Corporate Laboratory and Volatiles were anlayzed on the same samples by Analytical Resources Inc (ARI). This ARI sample set (B791) was batched with sample set B858 (Burlington laboratory number 42061). The MS and MSD results from B858 are included here for reference.

All samples were analyzed within EPA SW-846 required holding times, although sample 41858-6 was not extracted for PCB analysis within the required holding time of 14 days. Analysis dates and extraction dates (as applicable) are included in the metals report and in the report from ARI. The PCBs were extracted and analyzed in batchs. These dates are tabulated below. All PCB surrogates recovered between 50% and 150%.

Laboratory Number(s)	GC Run Number(s)	Date(s) Extracted	Date(s) Analyzed
41858-1 - 41858-5	AAJD through BAJD	10/6/92	10/8/92
41858-6	BAJD	10/7/92	10/8/92

All analyses were conducted according to EPA SW-846 Methods specified in the work plan. Additional analytical and quality control information is included in the attached analytical reports.

Sincerely,

Kathy Kreps

Kathy E. Kreps
Laboratory Manager
Burlington Environmental Inc.

enclosure

General Laboratory Report

Lab Number : 41858

Plant/Generator Name : Pier 91 Drilling Project #624878 Task #7301
Sample Type : Soils
Date of Receipt : 09/22/92 Analyst: BLW,BB,JLB,DKW
Date of Report : 11/03/92 QC Checked: _____
Parameters for Analysis: Total Metals, PCBs, Volatiles
Outside Lab : ARI Outside Lab Report No: B791

Data:

These six soil samples from the Pier 91 Drilling Project #624878, samples CP-HA-3-4.5-5, CP-HA-3-6-6.5, CP-HA-5-4.5-5, CP-HA-5-6-6.5, CP-HA-6-4.5-5 and CP-HA-6-6-6.5 were analyzed for Total Metals and PCBs by the Burlington Environmental Corporate Laboratory and for Volatiles by Analytical Resources Inc. Copies of the results are attached.

Comments and Conclusions:

BURLINGTON ENVIRONMENTAL

210 West Sand Bank Road
P.O. Box 330
Columbia, IL 62236-0330
618/281-7173
618/281-5120 FAX

CHAIN-OF-CUSTODY RECORD

C.O.C. SERIAL NO. 6066

PROJECT NAME Pier 91
PROJECT NUMBER 624878 MAJOR TASK 7301
SAMPLERS J. Peals
LAB DESTINATION BET

SAMPLE NO.	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	VOC	TOTAL METALS	PCBs					ICED	CHEMICALS ADDED	REMARKS (CHEMICAL ANALYSIS REQUEST FORM NUMBER IF APPLICABLE)
4188-1	9-22	9:45		X	CP 11A3-4.5-5	2	X	X	X					X		
4188-2	9-22	9:50		X	CP 11A3-6-6.5	2	X	X	X					X		
4188-3	9-22	11:30		X	CP 11A5-4.5-5	2	X	X	X					X		
-4	9-22	11:40		X	CP 11A5-6-6.5	2	X	X	X					X		HOLD METALS -
-5	9-21	11:35		X	CP 11A6-4.5-5	2	X	X	X					X		CALL JOE DEPNER
-6	9-21	11:50		X	CP 11A6-6-6.5	2	X	X	X					X		FOR DETAILS - 76#3306

RELINQUISHED BY SIGNATURE	DATE	TIME	RECEIVED BY SIGNATURE	DATE	TIME
[illegible]	9.22	1530	[illegible]	9.22.98	3:30

SHIPPING NOTES

LAB NOTES

BE-34 (1/92)

PCB Laboratory Report

Lab Number : 41858

Plant/Generator Name : PIER 91 / 624878
Sample Type : SOILS
Date of Receipt : 09/22/92
Date of Report : 10/12/92
Outside Lab :
Number of Samples : 6

Analyst: GCH
QC Checked: DKW 10/12/92
Outside Lab Report No:

Run #	Sample ID	Code Numbers	# Drums in Composite	Aroclor #	Total PCB (ppm)
AAJD33	41858-1	CP HA3-4.5-5		1260	3.04
AAJD61	41858-2	CP HA3-6-6.5		1260	85.
AAJD35	41858-3	CP HA5-4.5-5		1248/1260	1.3
AAJD36	41858-4	CP HA5-6-6.5		1260	0.13
BAJD110	41858-5	CP HA6-4.5-5		1254/1260	0.25
BAJD81	41858-6	CP HA6-6-6.5		1260	0.02
BAJE55	QC 1248	ADVISORY RANGE (12-45)		1248	32.
AAJD38	B10072-3	BLANK			<0.1
AAJD30	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.30
AAJD41	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.20
AAJD52	CCV	ADVSIORY RANGE (4.0-6.0 ppm)		1254	4.75
AAJD63	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.51
BAJD80	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.96
BAJD91	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	5.21
BAJD102	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	5.15
BAJD113	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.64
BAJE53	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	5.04
BAJE65	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	5.24

Metals Laboratory Report

Lab Number : 41858

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878 TASK # 7301
Sample Type : SOILS
Date of Receipt : 09/22/92 Analyst: BLW, BB, JLB
Date of Report : 10/28/92 QC Checked: 11/2/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41858-1 CP HA3-4.5-5	41858-2 CP HA3-6-6.5	41858-3 CP HA5-4.5-5	41858-4 CP HA5-6-6.5
Silver	<0.42	<0.41	<0.30	<0..43
Arsenic	1.5	1.6	2.1	1.7
Barium	12.5	12.9	14.6	16.9
Beryllium	0.23	0.24	0.23	0.23
Cadmium	<0.21	0.28	0.20	0.24
Chromium	14.2	14.9	13.8	14.2
Copper	4.5	6.1	4.9	4.6
Mercury	<0.020	<0.020	<0.020	<0.019
Nickel	18.6	20.1	17.0	19.0
Lead	2.4	5.0	3.0	4.5
Selenium	<0.22	<0.21	<0.20	<0.23
Zinc	16.2	18.1	17.1	19.8
Dry Weight	81.0%	93.7%	91.3%	86.1%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

Metals Laboratory Report

Lab Number : 41858

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878 TASK # 7301
Sample Type : SOILS
Date of Receipt : 09/22/92 Analyst: BLW, BB, JLB
Date of Report : 10/28/92 QC Checked: [illegible] 11/2/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41858-5 CP HA6-4.5-5	41858-6 CP HA6-6-6.5	METHOD BLANK IN MG/L
Silver	<0.35	<0.39	<0.010
Arsenic	0.78	0.59	<0.010
Barium	10.9	12.2	<0.20
Beryllium	0.25	0.23	<0.005
Cadmium	0.28	0.22	<0.005
Chromium	16.4	16.8	<0.010
Copper	5.8	5.2	<0.025
Mercury	<0.020	<0.019	<0.0002
Nickel	20.5	20.7	<0.040
Lead	7.0	4.6	<0.003
Selenium	<0.20	<0.19	<0.005
Zinc	24.3	18.7	<0.020
Dry Weight	94.5%	87.2%	

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
DATES ANALYZED: 10/5/92, 10/6/92, 10/7/92, 10/8/92
10/28/92, 10/30/92. Hg ANALYZED ON 09/28/92.

Metals Laboratory Report

Lab Number : 41858Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878 TASK #7301
Sample Type : SOILS
Date of Receipt : 09/22/92 Analyst: BLW, BB, JLB
Date of Report : 10/28/92 QC Checked: [illegible] 11/2/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	CONTROL SAMPLE PPS-46	CONTROL SAMPLE % RECOVERY	CONTROL SAMPLE PPS-46	CONTROL SAMPLE % RECOVERY
Silver	30.2	81.6		
Arsenic	13.9	92.9		
Barium	108.	80.6		
Beryllium	12.3	82.0		
Cadmium	89.0	81.7		
Chromium	45.5	111.0		
Copper	18.6	93.0		
Mercury	4.67*	77.8		
Nickel	26.5	94.6		
Lead	64.2	86.8	62.2	84.1
Selenium	85.1	93.5		
Zinc	49.7	93.8		

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
*MERCURY CONTROL SAMPLE WAS SRS003.

Metals Laboratory Report

Lab Number : 41858Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878 TASK #7301
Sample Type : SOILS
Date of Receipt : 09/22/92 Analyst: BLW, BB, JLB
Date of Report : 10/28/92 QC Checked: 11/2/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	% RECOVERY ICV	ICV	ICV	CCV
Silver	93.8			103.0
Arsenic	92.9			95.2
Barium	95.7			99.1
Beryllium	95.9			98.0
Cadmium	93.4			104.4
Chromium	94.2			102.0
Copper	97.4			102.3
Nickel	94.6			103.4
Lead	96.3	95.3	98.0	102.4
Selenium	94.3			94.8
Zinc	97.1			101.8

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

Metals Laboratory Report

Lab Number : 41858Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878 TASK #7301
Sample Type : SOILS
Date of Receipt : 09/22/92 Analyst: BLW, BB, JLB
Date of Report : 10/28/92 QC Checked: [illegible] 11/2/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	% RECOVERY CCV	CCV	CCV	CCV
Silver	103.5	102.5	100.9	
Arsenic	95.2	90.4	96.0	
Barium	98.2	97.2	103.7	
Beryllium	99.0	98.5	100.6	
Cadmium	104.5	104.9	104.0	
Chromium	101.3	101.1	103.2	
Copper	102.2	101.8	100.4	
Nickel	104.6	104.4	101.4	
Lead	105.5	102.1	98.9	102.8
Selenium	100.4	98.0	97.6	
Zinc	102.9	102.1	98.6	

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

Metals Laboratory Report

Lab Number : 41858Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878 TASK #7301
Sample Type : SOILS
Date of Receipt : 09/22/92 Analyst: BLW, BB, JLB
Date of Report : 10/28/92 QC Checked: [illegible] 11/2/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	% RECOVERY CCV	CCV	CCV
Lead	103.6	102.4	101.6

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

16 October 1992

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

Kathy Kreps
Burlington Environmental
2203 Airport Way South
Suite 400
Seattle, WA 98134

RE: Client Project: Pier 91;
ARI Job #B791

Dear Kathy:

Please find enclosed the results for the above referenced project. Your samples were received in good condition with no discrepancies in the paperwork.

Please note that medium level Volatiles were performed due to high hits in some of the samples, and a high background matrix in all of them which precluded a more concentrated analysis.

All raw data and a copy of this report will be kept on file by ARI should you need any further information regarding this project.

If you have any questions, please feel free to contact me at any time. You can reach me directly by calling 340-2866, ext. #118.

Sincerely,

ANALYTICAL RESOURCES, INC.

Suzanne Kitch

Suzanne Kitch
Project Coordinator

enclosures

cc: file B791

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0930M
Matrix: Soils/Sediments

Sample: Method Blank
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: NA

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	Methylene Chloride	200 U
67-64-1	Acetone	500 U
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	2-Butanone	500 U
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	Toluene	100 U
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	Total Xylenes	200 U
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	100%
Bromofluorobenzene	99.1%
d4-1,2-Dichloroethane	90.4%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0930
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/01/92 MAC:ctr

VTSR: NA

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: 5 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	2.0 U
74-83-9	Bromomethane	2.0 U
75-01-4	Vinyl Chloride	2.0 U
75-00-3	Chloroethane	2.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	Trans-1,2-Dichloroethene	1.0 U
156-59-2	Cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	1.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	1.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	0.7 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
1330-20-7	Total Xylenes	2.0 U
75-69-4	Trichlorofluoromethane	2.0 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0 U

Surrogate Recoveries

d8-Toluene	100%
Bromofluorobenzene	99.1%
d4-1,2-Dichloroethane	90.4%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0929M
Matrix: Soils/Sediments

Sample: Method Blank
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: NA

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	**Methylene Chloride**	**210**
67-64-1	Acetone	500 U
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	2-Butanone	500 U
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	**Toluene**	**100**
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	Total Xylenes	200 U
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	99.8%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	95.3%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0929
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/01/92 MAC:ctr

VTSR: NA

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: 5 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	2.0 U
74-83-9	Bromomethane	2.0 U
75-01-4	Vinyl Chloride	2.0 U
75-00-3	Chloroethane	2.0 U
75-09-2	**Methylene Chloride**	**2.1**
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	Trans-1,2-Dichloroethene	1.0 U
156-59-2	Cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	1.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	1.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	0.7 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	**Toluene**	**1.0**
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
1330-20-7	Total Xylenes	2.0 U
75-69-4	Trichlorofluoromethane	2.0 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0 U

Surrogate Recoveries

d8-Toluene	99.8%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	95.3%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791A
Matrix: Soils/Sediments

Sample: 41858-1
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .023 gm (Dry Weight)
Percent Moisture: 7.6%

CAS Number		µg/Kg
74-87-3	Chloromethane	430 U
74-83-9	Bromomethane	430 U
75-01-4	Vinyl Chloride	430 U
75-00-3	Chloroethane	430 U
75-09-2	Methylene Chloride	430 U
67-64-1	Acetone	1100 U
75-15-0	Carbon Disulfide	220 U
75-35-4	1,1-Dichloroethene	220 U
75-34-3	1,1-Dichloroethane	220 U
156-60-5	Trans-1,2-Dichloroethene	220 U
156-59-2	Cis-1,2-Dichloroethene	220 U
67-66-3	Chloroform	220 U
107-06-2	1,2-Dichloroethane	220 U
78-93-3	2-Butanone	1100 U
71-55-6	1,1,1-Trichloroethane	220 U
56-23-5	Carbon Tetrachloride	220 U
108-05-4	Vinyl Acetate	220 U
75-27-4	Bromodichloromethane	220 U
78-87-5	1,2-Dichloropropane	220 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	220 U
79-01-6	Trichloroethene	220 U
124-48-1	Dibromochloromethane	220 U
79-00-5	1,1,2-Trichloroethane	220 U
71-43-2	Benzene	220 U
10061-02-6	trans-1,3-Dichloropropene	220 U
110-75-8	2-Chloroethylvinylether	220 U
75-25-2	Bromoform	220 U
108-10-1	4-Methyl-2-Pentanone	1100 U
591-78-6	2-Hexanone	1100 U
127-18-4	Tetrachloroethene	150 U
79-34-5	1,1,2,2-Tetrachloroethane	220 U
108-88-3	**Toluene**	**290 B**
108-90-7	Chlorobenzene	220 U
100-41-4	**Ethylbenzene**	**16000**
100-42-5	Styrene	220 U
1330-20-7	**Total Xylenes**	**25000**
75-69-4	Trichlorofluoromethane	430 U
76-13-1	1,1,2-Trichlorotrifluoroethane	430 U

Surrogate Recoveries

d8-Toluene	89.9%
Bromofluorobenzene	90.0%
d4-1,2-Dichloroethane	86.0%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Lab ID: B791B
Matrix: Soils/Sediments

Sample: 41858-6
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .017 gm (Dry Weight)
Percent Moisture: 16.7%

CAS Number		µg/Kg
74-87-3	Chloromethane	590 U
74-83-9	Bromomethane	590 U
75-01-4	Vinyl Chloride	590 U
75-00-3	Chloroethane	590 U
75-09-2	**Methylene Chloride**	**1700 B**
67-64-1	Acetone	1500 U
75-15-0	Carbon Disulfide	290 U
75-35-4	1,1-Dichloroethene	290 U
75-34-3	1,1-Dichloroethane	290 U
156-60-5	Trans-1,2-Dichloroethene	290 U
156-59-2	Cis-1,2-Dichloroethene	290 U
67-66-3	Chloroform	290 U
107-06-2	1,2-Dichloroethane	290 U
78-93-3	2-Butanone	1500 U
71-55-6	1,1,1-Trichloroethane	290 U
56-23-5	Carbon Tetrachloride	290 U
108-05-4	Vinyl Acetate	290 U
75-27-4	Bromodichloromethane	290 U
78-87-5	1,2-Dichloropropane	290 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	290 U
79-01-6	Trichloroethene	290 U
124-48-1	Dibromochloromethane	290 U
79-00-5	1,1,2-Trichloroethane	290 U
71-43-2	Benzene	290 U
10061-02-6	trans-1,3-Dichloropropene	290 U
110-75-8	2-Chloroethylvinylether	290 U
75-25-2	Bromoform	290 U
108-10-1	4-Methyl-2-Pentanone	1500 U
591-78-6	2-Hexanone	1500 U
127-18-4	Tetrachloroethene	210 U
79-34-5	1,1,2,2-Tetrachloroethane	290 U
108-88-3	**Toluene**	**330 B**
108-90-7	Chlorobenzene	290 U
100-41-4	**Ethylbenzene**	**1200**
100-42-5	Styrene	290 U
1330-20-7	**Total Xylenes**	**5700**
75-69-4	Trichlorofluoromethane	590 U
76-13-1	1,1,2-Trichlorotrifluoroethane	590 U

Surrogate Recoveries

d8-Toluene	89.2%
Bromofluorobenzene	98.8%
d4-1,2-Dichloroethane	84.2%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791C
Matrix: Soils/Sediments

Sample: 41858-3
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .018 gm (Dry Weight)
Percent Moisture: 8.1%

CAS Number		µg/Kg
74-87-3	Chloromethane	560 U
74-83-9	Bromomethane	560 U
75-01-4	Vinyl Chloride	560 U
75-00-3	Chloroethane	560 U
75-09-2	**Methylene Chloride**	**1100 B**
67-64-1	Acetone	1400 U
75-15-0	Carbon Disulfide	280 U
75-35-4	1,1-Dichloroethene	280 U
75-34-3	1,1-Dichloroethane	280 U
156-60-5	Trans-1,2-Dichloroethene	280 U
156-59-2	Cis-1,2-Dichloroethene	280 U
67-66-3	Chloroform	280 U
107-06-2	1,2-Dichloroethane	280 U
78-93-3	2-Butanone	1400 U
71-55-6	1,1,1-Trichloroethane	280 U
56-23-5	Carbon Tetrachloride	280 U
108-05-4	Vinyl Acetate	280 U
75-27-4	Bromodichloromethane	280 U
78-87-5	1,2-Dichloropropane	280 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	280 U
79-01-6	Trichloroethene	280 U
124-48-1	Dibromochloromethane	280 U
79-00-5	1,1,2-Trichloroethane	280 U
71-43-2	**Benzene**	**300**
10061-02-6	trans-1,3-Dichloropropene	280 U
110-75-8	2-Chloroethylvinylether	280 U
75-25-2	Bromoform	280 U
108-10-1	4-Methyl-2-Pentanone	1400 U
591-78-6	2-Hexanone	1400 U
127-18-4	**Tetrachloroethene**	**430**
79-34-5	1,1,2,2-Tetrachloroethane	280 U
108-88-3	**Toluene**	**820 B**
108-90-7	Chlorobenzene	280 U
100-41-4	**Ethylbenzene**	**530000 K**
100-42-5	Styrene	280 U
1330-20-7	**Total Xylenes**	**630000 K**
75-69-4	Trichlorofluoromethane	560 U
76-13-1	1,1,2-Trichlorotrifluoroethane	560 U

Surrogate Recoveries

d8-Toluene	84.8%
Bromofluorobenzene	82.3%
d4-1,2-Dichloroethane	87.1%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791C2
Matrix: Soils/Sediments

Sample: 41858-3 Re-analysis
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .000092 gm (Dry Weight)
Percent Moisture: 8.1%

CAS Number		µg/Kg
74-87-3	Chloromethane	110000 U
74-83-9	Bromomethane	110000 U
75-01-4	Vinyl Chloride	110000 U
75-00-3	Chloroethane	110000 U
75-09-2	Methylene Chloride	110000 U
67-64-1	Acetone	270000 U
75-15-0	Carbon Disulfide	54000 U
75-35-4	1,1-Dichloroethene	54000 U
75-34-3	1,1-Dichloroethane	54000 U
156-60-5	Trans-1,2-Dichloroethene	54000 U
156-59-2	Cis-1,2-Dichloroethene	54000 U
67-66-3	Chloroform	54000 U
107-06-2	1,2-Dichloroethane	54000 U
78-93-3	2-Butanone	270000 U
71-55-6	1,1,1-Trichloroethane	54000 U
56-23-5	Carbon Tetrachloride	54000 U
108-05-4	Vinyl Acetate	54000 U
75-27-4	Bromodichloromethane	54000 U
78-87-5	1,2-Dichloropropane	54000 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	54000 U
79-01-6	Trichloroethene	54000 U
124-48-1	Dibromochloromethane	54000 U
79-00-5	1,1,2-Trichloroethane	54000 U
71-43-2	Benzene	54000 U
10061-02-6	trans-1,3-Dichloropropene	54000 U
110-75-8	2-Chloroethylvinylether	54000 U
75-25-2	Bromoform	54000 U
108-10-1	4-Methyl-2-Pentanone	270000 U
591-78-6	2-Hexanone	270000 U
127-18-4	Tetrachloroethene	38000 U
79-34-5	1,1,2,2-Tetrachloroethane	54000 U
108-88-3	Toluene	54000 U
108-90-7	Chlorobenzene	54000 U
100-41-4	**Ethylbenzene**	**920000**
100-42-5	Styrene	54000 U
1330-20-7	**Total Xylenes**	**2000000**
75-69-4	Trichlorofluoromethane	110000 U
76-13-1	1,1,2-Trichlorotrifluoroethane	110000 U

Surrogate Recoveries

d8-Toluene	97.1%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	94.3%

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected at the given detection limit.

J Indicates an estimated value when result is less than specified detection limit.

B This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791D
Matrix: Soils/Sediments

Sample: 41858-4
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .017 gm (Dry Weight)
Percent Moisture: 17.5%

CAS Number		µg/Kg
74-87-3	Chloromethane	590 U
74-83-9	Bromomethane	590 U
75-01-4	Vinyl Chloride	590 U
75-00-3	Chloroethane	590 U
75-09-2	**Methylene Chloride**	**750 B**
67-64-1	Acetone	1500 U
75-15-0	Carbon Disulfide	290 U
75-35-4	1,1-Dichloroethene	290 U
75-34-3	1,1-Dichloroethane	290 U
156-60-5	Trans-1,2-Dichloroethene	290 U
156-59-2	Cis-1,2-Dichloroethene	290 U
67-66-3	Chloroform	290 U
107-06-2	1,2-Dichloroethane	290 U
78-93-3	2-Butanone	1500 U
71-55-6	1,1,1-Trichloroethane	290 U
56-23-5	Carbon Tetrachloride	290 U
108-05-4	Vinyl Acetate	290 U
75-27-4	Bromodichloromethane	290 U
78-87-5	1,2-Dichloropropane	290 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	290 U
79-01-6	Trichloroethene	290 U
124-48-1	Dibromochloromethane	290 U
79-00-5	1,1,2-Trichloroethane	290 U
71-43-2	Benzene	290 U
10061-02-6	trans-1,3-Dichloropropene	290 U
110-75-8	2-Chloroethylvinylether	290 U
75-25-2	Bromoform	290 U
108-10-1	4-Methyl-2-Pentanone	1500 U
591-78-6	2-Hexanone	1500 U
127-18-4	Tetrachloroethene	210 U
79-34-5	1,1,2,2-Tetrachloroethane	290 U
108-88-3	**Toluene**	**2700 B**
108-90-7	Chlorobenzene	290 U
100-41-4	**Ethylbenzene**	**320000 K**
100-42-5	Styrene	290 U
1330-20-7	**Total Xylenes**	**440000 K**
75-69-4	Trichlorofluoromethane	590 U
76-13-1	1,1,2-Trichlorotrifluoroethane	590 U

Surrogate Recoveries

d8-Toluene	86.9%
Bromofluorobenzene	78.2%
d4-1,2-Dichloroethane	83.7%

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected at the given detection limit.

J Indicates an estimated value when result is less than specified detection limit.

B This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791D2
Matrix: Soils/Sediments

Sample: 41858-4 Re-analysis
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .00017 gm (Dry Weight)
Percent Moisture: 17.5%

CAS Number		µg/Kg
74-87-3	Chloromethane	59000 U
74-83-9	Bromomethane	59000 U
75-01-4	Vinyl Chloride	59000 U
75-00-3	Chloroethane	59000 U
75-09-2	Methylene Chloride	59000 U
67-64-1	Acetone	150000 U
75-15-0	Carbon Disulfide	29000 U
75-35-4	1,1-Dichloroethene	29000 U
75-34-3	1,1-Dichloroethane	29000 U
156-60-5	Trans-1,2-Dichloroethene	29000 U
156-59-2	Cis-1,2-Dichloroethene	29000 U
67-66-3	Chloroform	29000 U
107-06-2	1,2-Dichloroethane	29000 U
78-93-3	2-Butanone	150000 U
71-55-6	1,1,1-Trichloroethane	29000 U
56-23-5	Carbon Tetrachloride	29000 U
108-05-4	Vinyl Acetate	29000 U
75-27-4	Bromodichloromethane	29000 U
78-87-5	1,2-Dichloropropane	29000 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	29000 U
79-01-6	Trichloroethene	29000 U
124-48-1	Dibromochloromethane	29000 U
79-00-5	1,1,2-Trichloroethane	29000 U
71-43-2	Benzene	29000 U
10061-02-6	trans-1,3-Dichloropropene	29000 U
110-75-8	2-Chloroethylvinylether	29000 U
75-25-2	Bromoform	29000 U
108-10-1	4-Methyl-2-Pentanone	150000 U
591-78-6	2-Hexanone	150000 U
127-18-4	Tetrachloroethene	21000 U
79-34-5	1,1,2,2-Tetrachloroethane	29000 U
108-88-3	Toluene	29000 U
108-90-7	Chlorobenzene	29000 U
100-41-4	**Ethylbenzene**	**490000**
100-42-5	Styrene	29000 U
1330-20-7	**Total Xylenes**	**1000000**
75-69-4	Trichlorofluoromethane	59000 U
76-13-1	1,1,2-Trichlorotrifluoroethane	59000 U

Surrogate Recoveries

d8-Toluene	96.3%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	95.0%

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected at the given detection limit.

J Indicates an estimated value when result is less than specified detection limit.

B This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791E
Matrix: Soils/Sediments

Sample: 41858-5
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/29/92

Amount Analyzed: .019 gm (Dry Weight)
Percent Moisture: 6.6%

CAS Number		µg/Kg
74-87-3	Chloromethane	530 U
74-83-9	Bromomethane	530 U
75-01-4	Vinyl Chloride	530 U
75-00-3	Chloroethane	530 U
75-09-2	Methylene Chloride	530 U
67-64-1	Acetone	1300 U
75-15-0	Carbon Disulfide	260 U
75-35-4	1,1-Dichloroethene	260 U
75-34-3	1,1-Dichloroethane	260 U
156-60-5	Trans-1,2-Dichloroethene	260 U
156-59-2	Cis-1,2-Dichloroethene	260 U
67-66-3	Chloroform	260 U
107-06-2	1,2-Dichloroethane	260 U
78-93-3	2-Butanone	1300 U
71-55-6	1,1,1-Trichloroethane	260 U
56-23-5	Carbon Tetrachloride	260 U
108-05-4	Vinyl Acetate	260 U
75-27-4	Bromodichloromethane	260 U
78-87-5	1,2-Dichloropropane	260 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	260 U
79-01-6	Trichloroethene	260 U
124-48-1	Dibromochloromethane	260 U
79-00-5	1,1,2-Trichloroethane	260 U
71-43-2	Benzene	260 U
10061-02-6	trans-1,3-Dichloropropene	260 U
110-75-8	2-Chloroethylvinylether	260 U
75-25-2	Bromoform	260 U
108-10-1	4-Methyl-2-Pentanone	1300 U
591-78-6	2-Hexanone	1300 U
127-18-4	Tetrachloroethene	180 U
79-34-5	1,1,2,2-Tetrachloroethane	260 U
108-88-3	**Toluene**	**410 B**
108-90-7	Chlorobenzene	260 U
100-41-4	**Ethylbenzene**	**3500**
100-42-5	Styrene	260 U
1330-20-7	**Total Xylenes**	**13000**
75-69-4	Trichlorofluoromethane	530 U
76-13-1	1,1,2-Trichlorotrifluoroethane	530 U

Surrogate Recoveries

d8-Toluene	97.8%
Bromofluorobenzene	94.3%
d4-1,2-Dichloroethane	94.8%

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected at the given detection limit.

J Indicates an estimated value when result is less than specified detection limit.

B This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B791F
Matrix: Soils/Sediments

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

Sample: 41858-2
Medium Level
QC Report No: B791-Burlington Env.
Project: Pier 91

VTSR: 09/23/92

Instrument: FINN 1
Date Analyzed: 09/30/92

Amount Analyzed: .016 gm (Dry Weight)
Percent Moisture: 18.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	630 U
74-83-9	Bromomethane	630 U
75-01-4	Vinyl Chloride	630 U
75-00-3	Chloroethane	630 U
75-09-2	Methylene Chloride	630 U
67-64-1	Acetone	1600 U
75-15-0	Carbon Disulfide	310 U
75-35-4	1,1-Dichloroethene	310 U
75-34-3	1,1-Dichloroethane	310 U
156-60-5	Trans-1,2-Dichloroethene	310 U
156-59-2	Cis-1,2-Dichloroethene	310 U
67-66-3	Chloroform	310 U
107-06-2	1,2-Dichloroethane	310 U
78-93-3	2-Butanone	1600 U
71-55-6	1,1,1-Trichloroethane	310 U
56-23-5	Carbon Tetrachloride	310 U
108-05-4	Vinyl Acetate	310 U
75-27-4	Bromodichloromethane	310 U
78-87-5	1,2-Dichloropropane	310 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	310 U
79-01-6	Trichloroethene	310 U
124-48-1	Dibromochloromethane	310 U
79-00-5	1,1,2-Trichloroethane	310 U
71-43-2	Benzene	310 U
10061-02-6	trans-1,3-Dichloropropene	310 U
110-75-8	2-Chloroethylvinylether	310 U
75-25-2	Bromoform	310 U
108-10-1	4-Methyl-2-Pentanone	1600 U
591-78-6	2-Hexanone	1600 U
127-18-4	Tetrachloroethene	220 U
79-34-5	1,1,2,2-Tetrachloroethane	310 U
108-88-3	Toluene	310 U
108-90-7	Chlorobenzene	310 U
100-41-4	**Ethylbenzene**	**5200**
100-42-5	Styrene	310 U
1330-20-7	**Total Xylenes**	**8700**
75-69-4	Trichlorofluoromethane	630 U
76-13-1	1,1,2-Trichlorotrifluoroethane	630 U

Surrogate Recoveries

d8-Toluene	90.4%
Bromofluorobenzene	88.5%
d4-1,2-Dichloroethane	82.4%

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected at the given detection limit.

J Indicates an estimated value when result is less than specified detection limit.

B This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B858B
Matrix: Soils/Sediments

Sample: 42061-2

QC Report No: B858 - Burlington Env.
Project: 624878
Pier 91
VTSR: 10/01/92

Data Release Authorized:
Report: 10/27/92 MAC:X]]r

Instrument: FINN 1
Date Analyzed: 10/02/92

Amount Analyzed: 0.036 gm (Dry Weight)
Percent Moisture: 13.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	280 U
74-83-9	Bromomethane	280 U
75-01-4	Vinyl Chloride	280 U
75-00-3	Chloroethane	280 U
75-09-2	Methylene Chloride	370 B
67-64-1	Acetone	690 U
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	140 U
75-34-3	1,1-Dichloroethane	350
156-60-5	Trans-1,2-Dichloroethene	140 U
156-59-2	Cis-1,2-Dichloroethene	140 U
67-66-3	Chloroform	140 U
107-06-2	1,2-Dichloroethane	140 U
78-93-3	2-Butanone	2900 UJ
71-55-6	1,1,1-Trichloroethane	140 U
56-23-5	Carbon Tetrachloride	140 U
108-05-4	Vinyl Acetate	140 U
75-27-4	Bromodichloromethane	140 U
78-87-5	1,2-Dichloropropane	140 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	140 U
79-01-6	Trichloroethene	140 U
124-48-1	Dibromochloromethane	140 U
79-00-5	1,1,2-Trichloroethane	140 U
71-43-2	Benzene	320
10061-02-6	trans-1,3-Dichloropropene	140 U
110-75-8	2-Chloroethylvinylether	140 U
75-25-2	Bromoform	140 U
108-10-1	4-Methyl-2-Pentanone	690 U
591-78-6	2-Hexanone	690 U
127-18-4	Tetrachloroethene	740
79-34-5	1,1,2,2-Tetrachloroethane	140 U
108-88-3	Toluene	9500
108-90-7	Chlorobenzene	280 UJ
100-41-4	Ethylbenzene	2900
100-42-5	Styrene	420 UJ
1330-20-7	Total Xylenes	20000
75-69-4	Trichlorofluoromethane	280 U
76-13-1	1,1,2-Trichlorotrifluoroethane	950

Surrogate Recoveries

d8-Toluene	84.4%
Bromofluorobenzene	90.7%
d4-1,2-Dichloroethane	84.1%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B858Bms
Matrix: Soils/Sediments

Sample: 42061-2
Matrix Spike
QC Report No: B858 - Burlington Env.
Project: 624878
Pier 91
VTSR: 10/01/92

Data Release Authorized:
Report: 10/27/92 MAC:X jjr

Instrument: FINN 1
Date Analyzed: 10/02/92

Amount Analyzed: 0.034 gm (Dry Weight)
Percent Moisture: 13.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	290 U
74-83-9	Bromomethane	290 U
75-01-4	Vinyl Chloride	290 U
75-00-3	Chloroethane	290 U
75-09-2	Methylene Chloride	290 U
67-64-1	Acetone	730 U
75-15-0	Carbon Disulfide	150 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	270
156-60-5	Trans-1,2-Dichloroethene	150 U
156-59-2	Cis-1,2-Dichloroethene	150 U
67-66-3	Chloroform	150 U
107-06-2	1,2-Dichloroethane	150 U
78-93-3	2-Butanone	1800 UJ
71-55-6	1,1,1-Trichloroethane	150 U
56-23-5	Carbon Tetrachloride	150 U
108-05-4	Vinyl Acetate	150 U
75-27-4	Bromodichloromethane	150 U
78-87-5	1,2-Dichloropropane	150 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	150 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	150 U
79-00-5	1,1,2-Trichloroethane	150 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	150 U
110-75-8	2-Chloroethylvinylether	150 U
75-25-2	Bromoform	150 U
108-10-1	4-Methyl-2-Pentanone	730 U
591-78-6	2-Hexanone	730 U
127-18-4	Tetrachloroethene	890
79-34-5	1,1,2,2-Tetrachloroethane	150 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	2500
100-42-5	Styrene	440 UJ
1330-20-7	Total Xylenes	18000
75-69-4	Trichlorofluoromethane	290 U
76-13-1	1,1,2-Trichlorotrifluoroethane	700

Surrogate Recoveries

d8-Toluene	86.1%
Bromofluorobenzene	93.1%
d4-1,2-Dichloroethane	84.9%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B858Bmsd
Matrix: Soils/Sediments

Sample: 42061-2
Matrix Spike Dup.
QC Report No: B858 - Burlington Env.
Project: 624878
Pier 91
VTSR: 10/01/92

Data Release Authorized:
Report: 10/27/92 MAC:X jjr

Instrument: FINN 1
Date Analyzed: 10/02/92

Amount Analyzed: 0.036 gm (Dry Weight)
Percent Moisture: 13.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	280 U
74-83-9	Bromomethane	280 U
75-01-4	Vinyl Chloride	280 U
75-00-3	Chloroethane	280 U
75-09-2	Methylene Chloride	450 B
67-64-1	Acetone	700 U
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	320
156-60-5	Trans-1,2-Dichloroethene	140 U
156-59-2	Cis-1,2-Dichloroethene	140 U
67-66-3	Chloroform	140 U
107-06-2	1,2-Dichloroethane	140 U
78-93-3	2-Butanone	2500 UJ
71-55-6	1,1,1-Trichloroethane	140 U
56-23-5	Carbon Tetrachloride	140 U
108-05-4	Vinyl Acetate	140 U
75-27-4	Bromodichloromethane	140 U
78-87-5	1,2-Dichloropropane	140 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	140 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	140 U
79-00-5	1,1,2-Trichloroethane	140 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	140 U
110-75-8	2-Chloroethylvinylether	140 U
75-25-2	Bromoform	140 U
108-10-1	4-Methyl-2-Pentanone	700 U
591-78-6	2-Hexanone	700 U
127-18-4	Tetrachloroethene	790
79-34-5	1,1,2,2-Tetrachloroethane	140 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	2700
100-42-5	Styrene	420 UJ
1330-20-7	Total Xylenes	19000
75-69-4	Trichlorofluoromethane	280 U
76-13-1	1,1,2-Trichlorotrifluoroethane	870

Surrogate Recoveries

d8-Toluene	85.1%
Bromofluorobenzene	91.5%
d4-1,2-Dichloroethane	85.7%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B858

Client: Burlington Env.
Project: 624878

Sample No: 42061-2

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONC (µg/Kg)	MS CONC (µg/Kg)	MS % REC	QC LIMITS REC
1,1-Dichloroethene	7350	0	11000	150	59-172
Trichloroethene	7350	0	8280	113	62-137
Benzene	7350	324	8490	111	66-142
Toluene	7350	9490	16400	94.0	59-139
Chlorobenzene	7350	0	8490	116	60-133

COMPOUND	SPIKE ADDED (µg/Kg)	MSD CONC (µg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	6940	10000	144	4.1	22	59-172
Trichloroethene	6940	7700	111	1.8	24	62-137
Benzene	6940	8040	111	0.0	21	66-142
Toluene	6940	16400	99.6	-5.8	21	59-139
Chlorobenzene	6940	7760	112	3.5	21	60-133

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Asterisked values outside QC Limits

Comments: *QC Limits taken from CLP OLM01.6 (June 1991)*

DBP

Report prepared: 10/27/92 MACX Jr

FORM III VOA-2

CHEMPRO
A Burlington Environmental Inc Company

CHEMICAL PROCESSORS, INC.
Park 90/5, Suite 400
2203 Airport Way South
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE 9-23-92 PAGE 1 OF 1

PROJECT P91 #
CLIENT INFO. CONTACT K. Kreis
ADDRESS
TELEPHONE# 223-7791
SAMPLERS NAME PHONE#
SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) As. Ba. Cd. Cr. Cu. Pb. Ni. Hg. Ag. Se. Tl. Sb. Zn	TCLP ORGANICS	GENERAL CHEMISTRY (Specify)				OTHER (Specify)			NUMBER OF CONTAINERS
1. CPHA3-4.5-5	9-22	9:45	41858-1	Soil		X																1
2. CPHA3-6-6.5	9-22	9:50	41858-~~2~~6			X																1
3. CPHA5-4.5-5	9-22	11:30	41858-3			X																1
4. CPHA5-6-6.5	9-22	11:40	41858-4			X																1
5. CPHA6-4.5-5	9-22	11:35	41858-5			X																1
6. CPHA6-6-6.5	9-22	11:56	41858-~~6~~2			X																1
7.																						
8.																						

Also change L yard to match.
Changed 2nd Sample ID and sixth ID per Kathy Kreis 9/23/92 14:45

Relinquished By	Relinquished By	Relinquished By
T. Claus		
Signature T. Claus	Signature	Signature
Printed Name BET	Printed Name	Printed Name
Firm 9-23-92	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By Jan Felkins	Received By	Received By
Signature Jan Felkins	Signature	Signature
Printed Name A.A.T.	Printed Name	Printed Name
Firm 9/23/92 12:30	Firm	Firm
Date/Time	Date/Time	Date/Time

PROJECT INFORMATION
Shipping I.D. No.
VIA
Project

SAMPLE RECEIPT
Total No. of Containers
Chain of Custody Seals
Received in good condition
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS
Low Level volatiles
~~+ TICS~~ NOTICS per Kathy 9/24/92 13:20 T. Claus
(Please Return Cooler)
TX

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

CHEMPRO
A Burlington Environmental Inc. Company

CHEMICAL PROCESSORS, INC.
Park 90/5, Suite 400
2203 Airport Way South
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE _____ PAGE _____ OF _____

PROJECT P91 #
CLIENT INFO. CONTACT K. Kreis
ADDRESS
TELEPHONE# 223-7791
SAMPLERS NAME PHONE#
SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) As. Ba. Cd. Cr. Cu. Pb. Ni. Hg. Ag. Se. Tl. Sb. Zn	TCLP ORGANICS	GENERAL CHEMISTRY (Specify)				OTHER (Specify)				NUMBER OF CONTAINERS
1. CPHA3-4.5-5	9-22	9:45	41858-1	soil		X																	1
2. CPHA3-6-6.5	9-22	9:50	41858-2			X																	1
3. CPHA5-4.5-5	9-22	11:30	41858-3			X																	1
4. CPHA5-6-6.5	9-22	11:40	41858-4			X																	1
5. CPHA6-4.5-5	9-22	11:35	41858-5			X																	1
6. CPHA6-6-6.5	9-22	11:50	41859-6			X																	1
7.																							
8.																							

Relinquished By	Relinquished By	Relinquished By
Signature	Signature	Signature
Printed Name	Printed Name	Printed Name
Firm	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By	Received By	Received By
Signature	Signature	Signature
Printed Name	Printed Name	Printed Name
Firm	Firm	Firm
Date/Time	Date/Time	Date/Time

PROJECT INFORMATION
Shipping I.D. No.
VIA
Project

SAMPLE RECEIPT
Total No. of Containers
Chain of Custody Seals
Received in good condition
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS
Low Level volatiles + TICs

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

Client: Burl ENV.	Project #: Project: Pier 91	
Client Contact: Kathy Kaeps	PO#: 41858	Logged In by: QF

Sample Acknowledgement

Page 1 of 1

ARI Job Number: B791	
VTSR: 9/23/92	Turn-Around: 10/23/91
	Requested TA:

Billing Address:

Date of Transmittal: _____ Time: _____

Addressee: Kathy Kaeps Fax No: _____

Company: Burl ENV. Phone No: _____

Analytical Resources, Inc.
(206) 621-6490
(206) 621-7523 - fax

Following is a list of samples received and logged in at ARI.
Please verify information listed.
If there are discrepancies, contact ARI Lab Contact.

ARI Lab Contact: Suzanne Fitch
(Please call this person with questions.)

	SMO/CLIENT SAMPLE ID:	ARI ID NO	Sample Matrix	#Bottles per sample
1	41858-1	B791 A	Soil	1 20z gl.
2	41858-~~2~~ 6	B	↓	↓
3	41858-3	C		
4	41858-4	D		
5	41858-5	E		
6	41858-~~6~~ 2	F		
7				
8				
9				
10				

NO Samples	Matrix	Parameter	Meth No.	Estimated Cost Per Sample	Estimated Extended Costs
6	soil	VOA	8240	225.00	1350.00
				TOTAL	$1350.00

ARI 06/1/90

NOTE Unless arrangements for storage/archiving are made for this project, water samples will be disposed of 60 days (VOA waters 30 day's) after sample receipt. (Opened volatile waters will be disposed of after analysis). Soil samples will be disposed of 90 days after sample receipt (VOA soils will be 60 days).

PROJECT MEMORANDUM

DATE: December 15, 1992

TO: Joe Depner, Hydrogeologist

FROM: Nels Cone, Chemist

SUBJECT: DATA VALIDATION OF ANALYTICAL RESULTS FROM PIER 91 RCRA FACILITY INVESTIGATION, PROJECT 624878, DATA SET #3B

During the period of September 17-25, 1992, soil samples were collected by Burlington Environmental Inc. (Burlington). Samples requesting PCB (EPA SW-846 Method 8080) and total metal analyses (EPA SW-846 Methods 3050, 6010, 7000) were submitted to Burlington Corporate Laboratory. Samples receiving volatile compound (EPA SW-846 Method 8240) analysis were submitted to Analytical Resources Inc. of Seattle, Washington. I performed a review of the analytical results on the samples listed below:

CP-116-2-2.5	CP-HA-3-4.5-5	CP-HA-6-6-6.5	CP-HA-10-1.5-2
CP-117-2-4	CP-HA-3-6-6.5	CP-HA-7-1.5-2	CP-HA-11-1.5-2
CP-117-6-8	CP-HA-5-4.5-5	CP-HA-7-3-3.5	CP-HA-11-6-6.5
CP-119-2-4	CP-HA-5-6-6.5	CP-HA-8-3-3.5	CP-HA-12-5-5.5
CP-119-6-8	CP-HA-6-5-4.5	CP-HA-8-4.5-5	CP-HA-12-6-6.5

Properly completed chain-of-custody forms were included, along with documented signatures from field to laboratory receipt. All samples were shown as having been properly iced and received in good condition. All holding times were clearly written and evaluated according to regulatory protocol (*National Functional Guidelines for Organic Data Review*, USEPA, 1990). All samples received the requested analyses, and laboratory extraction/analysis times met the established guidelines with the exception of PCB analyses for samples CP-HA-6-6.5 through CP-HA-12-6-6.5. As required by regulatory directives these samples can be considered as useful concentration *estimates* only. Proper data qualifier flags accompanied all other analytical results as needed, and their use is consistent with USEPA guidelines.

For PCB and metal analyses, initial calibration verification (ICV) and continuing calibration verification (CCV) results displayed percent differences consistently within advisory range specific to the analytical methodologies. Matrix spike (when provided) and method blank analyses displayed surrogate recoveries well within required QC limits.

For volatile compounds, medium-level analysis was performed to most samples due to the elevated concentration of hydrocarbons. As expected, elevated detection limits were reported, yet surrogate recoveries met within acceptable QC limits. Method blanks and matrix spike analyses displayed surrogate recoveries well within required QC limits.

For volatile analysis of samples CP-HA-7-1.5-2 through CP-HA-12-6-6.5, four (4) different blanks were provided. The first two blanks are reported to contain lab contamination of methylene chloride, acetone, 2-butanone, toluene, and xylenes. The third and fourth blanks are clear. As a result, the reported values were assigned data reporting qualifiers depending upon the various blanks used for analysis. Specifically, sample CP-HA-7-1.5-2 used blanks one and two, CP-HA-7-3-3.5 used blank two, CP-HA-11-1.5-2 used blank two, CP-HA-11-6-6.5 used blanks two and three, CP-HA-12-5-5.5, CP-HA-12-6-6.5, CP-HA-10-1.5-2, CP-HA-8-3-3.5, and CP-HA-8-4.5-5 all used blank three. While the analytical results may be scientifically sound, inconsistencies among blank usage create a fair amount of confusion regarding which samples also contain lab contamination.

Regardless of the exceptions noted above, the data quality objectives as defined in Table F-2 of the QAPP are met. Accordingly, this data set can be considered valid for its intended use.

NC/rlk/b41:1915b.mem

41805

Burlington
Environmental

November 3, 1992

Joe Depner
Burlington Environmental Technical Services
7440 West Marginal Way South
Seattle, WA 98108

Project: Pier 91 Drilling, Project #624878

Dear Joe:

Five soil samples for the Pier 91 Drilling Project #624878 were received at our laboratory September 18, 1992. These samples were received in good condition. The samples were analyzed for total metals and PCBs at the Burlington Environmental Corporate Laboratory and Volatiles were anlayzed on the same samples by Analytical Resources Inc.

All samples were analyzed within EPA SW-846 required holding times, although the samples were not extracted for PCB analysis within the required holding time of 14 days. Analysis dates and extraction dates (as applicable) are included in the metals report and in the report from ARI. The PCBs were extracted and analyzed in batchs. These dates are tabulated below. All PCB surrogates recovered between 50% and 150%.

Laboratory Number(s)	GC Run Number(s)	Date(s) Extracted	Date(s) Analyzed
41805-1 - 41805-7	AAJC through BAJC	10/3/92	10/5/92 - 10/6/92
41805-8 - 41805-9	AAJD through BAJD	10/6/92	10/7/92

All analyses were conducted according to EPA SW-846 Methods specified in the work plan. Additional analytical and quality control information is included in the attached analytical reports.

Sincerely,

Kathy E. Kreps

Kathy E. Kreps
Laboratory Manager
Burlington Environmental Inc.

enclosure

General Laboratory Report

Lab Number : 41805

Plant/Generator Name : Pier 91 Drilling Project #624878
Sample Type : Soils
Date of Receipt : 09/18/92 Analyst: BLW,JLB,BB,DKW
Date of Report : 11/02/92 QC Checked: _____
Parameters for Analysis: Total Metals, PCBs, Volatiles
Outside Lab : ARI Outside Lab Report No: B790

Data:

These nine soil samples, CP-HA-7-1.5-2, CP-HA-7-3-3.5, CP-HA-11-1.5-2, CP-HA-11-6-6.5, CP-HA-12-5-5.5, CP-HA-12-6-6.5, CP-HA-10-1.5-2, CP-HA-8-3-3.5 and CP-HA-8-4.5-5 were analyzed for Total Metals and PCBs by the Burlington Environmental Corporate Laboratory and for Volatiles by Analytical Resources Inc. A copy of the results is attached.

Comments and Conclusions:

BURLINGTON ENVIRONMENTAL

210 West Sand Bank Road
P.O. Box 330
Columbia, IL 62236-0330
618/281-7173
618/281-5120 FAX

CHAIN-OF-CUSTODY RECORD

C.O.C. SERIAL NO. 6063

PROJECT NAME: PIER 91
PROJECT NUMBER: 674878
MAJOR TASK:
SAMPLERS: J. PENLE
LAB DESTINATION: BURLINGTON

SAMPLE NO.	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	TYPE OF ANALYSIS: VOC	TOTAL METALS	2082					ICED	PRESERVATIVES: CHEMICALS ADDED	REMARKS (CHEMICAL ANALYSIS REQUEST FORM NUMBER IF APPLICABLE)
411X05-1	9-16	1000		X	CP-11A-7-1.5-2	2	X	X	X					X		HOLD METALS UNTIL QUANT. LIMITS HAVE BEEN OK'D - CALL JOE DEPNER, 767-3306 FOR DETAILS
-2	9-16	1015		X	CP-11A-7-3-3.5	2	X	X	X					X		
-3	9-17	1400		X	CP-11A-11-1.5-2	2	X	X	X					X		
-4	9-17	1420		X	CP-11A-11-6-6.5	2	X	X	X					X		
-5	9-17	1320		X	CP-11A-12-5-5.5	2	X	X	X					X		
-6	9-17	1330		X	CP-11A-12-6-6.5	2	X	X	X					X		
-7	9-18	1115		X	CP-11A-10-1.5-2	2	X	X	X					X		
-8	9-18	1315		X	CP-11A-8-3-3.5	2	X	X	X					X		
-9	9-18	1325		X	CP-11A-8-4.5-5	2	X	X	X					X		

RELINQUISHED BY: SIGNATURE	DATE	TIME	RECEIVED BY: SIGNATURE	DATE	TIME
Joe Kunz	9-18	1705	Kathy Ayers	9/18/92	1705

SHIPPING NOTES

LAB NOTES

BE-34 (1/92)

PCB Laboratory Report

Lab Number : 41805

Plant/Generator Name : PIER 91 / 624878
Sample Type : SOILS
Date of Receipt : 09/18/92
Date of Report : 10/12/92
Outside Lab :
Number of Samples : 9

Analyst: GCH
QC Checked: KW 10/12/92
Outside Lab Report No:

Run #	Sample ID	Code Numbers	# Drums in Composite	Aroclor #	Total PCB (ppm)
AAJC51	41805-1	CP-HA-7-1.5-2		1254	4.0
AAJC7	41805-2	CP-HA-7-3-3.5		1254	2.0
AAJC8	41805-3	CP-HA-11-1.5-2		1254/1260	4.2
AAJC9	41805-4	CP-HA-11-6-6.5		1254	0.13
BAJC56	41805-5	CP-HA-12-5-5.5		1254/1260	0.44
BAJC57	41805-6	CP-HA-12-6-6.5		1254/1260	0.36
BAJC58	41805-7	CP-HA-10-1.5-2		1254/1260	0.96
BAJD111	41805-8	CP-HA-8-3-3.5		1254/1260	0.18
AAJD39	41805-9	CP-HA-8-4.5-5		1254/1260	0.08
BAJC59	B10032-3	BLANK			<0.1
BAJD88	B10062-1	BLANK			<0.1
AAJC2	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1248	4.01
AAJC15	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1248	4.20
AAJD30	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.30
AAJD41	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.20
BAJD80	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	4.96
BAJC52	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1248	4.58
BAJD91	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1254	5.21
BAJC65	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1248	4.20
AAJC48	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1248	4.30
AAJC53	CCV	ADVISORY RANGE (4.0-6.0 ppm)		1248	4.31

Metals Laboratory Report

Lab Number : 41805

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 09/18/92 Analyst: BLW, JLB, BB
Date of Report : 10/28/92 QC Checked: 10/28/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41805-1 CP-HA-7-1.5-2	41805-2 CP-HA-7-3-3.5	41805-3 CP-HA-11-1.5-2	41805-4 CP-HA-11-6-6.5
Silver	0.37	<0.39	<0.37	<0.35
Arsenic	2.4	1.7	1.6	1.6
Barium	111.	70.3	35.5	15.6
Beryllium	0.40	0.30	0.30	0.20
Cadmium	4.2	1.8	0.51	0.37
Chromium	96.2	48.2	57.1	26.4
Copper	71.9	33.7	11.8	5.4
Mercury	0.16	0.030	<0.020	<0.019
Nickel	35.8	25.6	37.0	17.0
Lead	326.	152.	41.7	9.2
Selenium	<0.20	<0.20	<0.20	<0.21
Zinc	395.	196.	68.4	42.7
Dry Weight	92.3%	92.9%	92.2%	91.1%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

Metals Laboratory Report

Lab Number : 41805

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 09/18/92 Analyst: BLW, JLB, BB
Date of Report : 10/28/92 QC Checked: 10/28/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41805-5 CP-HA-12-5-5.5	41805-6 CP-HA-12-6-6.5	41805-7 CP-HA-10-1.5-2	41805-8 CP-HA-8-3-3.5
Silver	<0.36	<0.39	<0.34	<0.36
Arsenic	1.5	0.96	3.1	1.4
Barium	13.1	16.3	52.4	19.9
Beryllium	0.19	<0.19	0.18	0.25
Cadmium	0.23	0.26	1.8	0.30
Chromium	10.9	11.9	49.4	18.1
Copper	4.1	4.3	36.4	42.1
Mercury	<0.020	<0.017	0.034	<0.020
Nickel	14.4	14.6	19.5	19.6
Lead	14.4	8.6	34.2	10.6
Selenium	<0.19	<0.20	<0.21	<0.19
Zinc	16.3	17.9	135.	27.3
Dry Weight	89.6%	88.9%	94.5	94.7%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

Metals Laboratory Report

Lab Number : 41805

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 09/18/92 Analyst: BLW, JLB, BB
Date of Report : 10/28/92 QC Checked: [illegible] 10/28/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	41805-9 CP-HA-8-4.5-5	METHOD BLANK IN MG/L
Silver	<0.38	<0.010
Arsenic	1.5	<0.010
Barium	18.1	<0.20
Beryllium	0.24	<0.005
Cadmium	0.23	<0.005
Chromium	14.9	<0.010
Copper	18.1	<0.025
Mercury	<0.020	<0.0002
Nickel	22.4	<0.040
Lead	8.0	<0.050
Selenium	<0.21	<0.005
Zinc	20.9	<0.020

Dry Weight 95.0%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
DATES ANALYZED: 09/29/92, 10/02/92, 10/05/92, 10/06/92.
Hg ANALYZED 09/28/92.

Metals Laboratory Report

Lab Number : 41805Q

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOIL
Date of Receipt : 09/18/92 Analyst: BLW, JLB, BB
Date of Report : 10/28/92 QC Checked: BRD 10/28/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	CONTROL SAMPLE PPS-46	CONTROL SAMPLE % RECOVERY	41805-4 MS % RECOVERY	41805-4 MSD % RECOVERY
Silver	30.2	81.6	74.0	73.5
Arsenic	14.7	98.2	72.7	78.4
Barium	114.	85.1	92.0	89.4
Beryllium	12.7	84.7	89.5	88.9
Cadmium	89.4	82.0	90.0	91.5
Chromium	48.6	118.5	83.8	84.2
Copper	18.5	92.5	96.0	82.1
Mercury	4.67*	77.8	82.6	82.5
Nickel	26.4	94.3	96.0	93.7
Lead	61.9	83.6	77.0	72.5
Selenium	81.4	89.5	45.2	41.0
Zinc	49.2	92.8	96.5	83.1

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
*MERCURY CONTROL SAMPLE SRS003.

Metals Laboratory Report

Lab Number : 41805Q

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOIL
Date of Receipt : 09/18/92 Analyst: BLW, JLB, BB
Date of Report : 10/28/92 QC Checked: [illegible] 10/28/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 6010, 7000.

Metals:	% RECOVERY ICV	ICV	CCV	CCV
Silver			103.3	101.9
Arsenic	100.5	107.5	90.8	98.8
Barium			104.4	103.8
Beryllium			101.5	101.1
Cadmium			103.8	103.6
Chromium			105.4	104.1
Copper			104.2	102.5
Nickel			103.8	102.4
Lead			95.5	104.0
Selenium	98.7		94.0	96.4
Zinc			101.5	99.4

Comments and Conclusions:

RESULTS IN PERCENT RECOVERY.

Metals Laboratory Report

Lab Number : 41805Q

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOIL
Date of Receipt : 09/18/92 Analyst: BLW, JLB, BB
Date of Report : 10/28/92 QC Checked: BNB 10/28/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 6010, 7000.

Metals:	% RECOVERY CCV	CCV	CCV
Silver	101.6		
Arsenic	100.8	100.8	107.5
Barium	102.3		
Beryllium	100.1		
Cadmium	103.1		
Chromium	102.6		
Copper	101.6		
Nickel	102.1		
Lead	99.5		
Selenium	90.8	90.8	93.6
Zinc	98.8		

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

Certificate of Analysis

SOLID WASTE LABORATORY CONTROL SAMPLE

Catalog No: SRS003 Name: Metals on Soil

Lot No: BC003 USE EPA METHOD* 3050

Analysis by EPA* Method 3050

Arsenic (CAS# 1327-53-3)	30 ± 20 PPM
Barium (CAS# 7440-39-3)	575 ± 65 PPM
Cadmium (CAS# 7440-43-9)	1.3 ± 0.7 PPM
Chromium (CAS# 7440-47-3)	12 ± 5 PPM
Mercury (CAS# 7439-97-6)	6 ± 3 PPM

*Test methods for evaluating SW846, Third Edition, 1986

Analytical ranges based on interlab 95% confidence levels.

Results based on a dry weight basis.

Manufactured by Resource Technology Corporation

for exclusive distribution by FISHER SCIENTIFIC.

Fisher Scientific

Chemical Division
1 Reagent Lane
Fair Lawn, N.J. 07410
(201) 796-7100

ENVIRONMENTAL
RESOURCE ASSOCIATES
Arvada, Colorado 80002 ? 1-800-ERA-0122

Certification

PriorityPollutnT™/CLP Quality Control Standards

Inorganics in Soil

Parameter	Lot Number 212 Certified Value mg/kg	Advisory Range mg/kg
TRACE METALS		
aluminum	11500	6530-16500
antimony	52	0-160
arsenic	15	5.6-25
barium	134	93-174
beryllium	15	9.5-21
cadmium	109	76-142
calcium	7130	4990-9270
chromium	41	20-62
cobalt	211	148-274
copper	20	8.0-32
iron	14500	10100-20150
lead	74	37-111
magnesium	3620	2530-4710
manganese	310	217-403
mercury	31	15-46
molybdenum	16	8.0-24
nickel	28	8.0-48
potassium	3790	2650-4930
selenium	91	45-136
silver	37	18-56
sodium	400	173-627
thallium	99	48-150
vanadium	57	40-74
zinc	53	26-80
CYANIDE	147	74-220

16 October 1992

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

Kathy Kreps
Burlington Environmental
2203 Airport Way South
Suite 400
Seattle, WA 98134

RE: Client Project: Pier 91;
ARI Job #B790

Dear Kathy:

Please find enclosed the results for the above referenced project. Your samples were received in good condition with no discrepancies in the paperwork.

Please note that medium level Volatiles were performed due to high hits in some of the samples, and a high background matrix in all of them which precluded a more concentrated analysis.

All raw data and a copy of this report will be kept on file by ARI should you need any further information regarding this project.

If you have any questions, please feel free to contact me at any time. You can reach me directly by calling 340-2866, ext. #118.

Sincerely,

ANALYTICAL RESOURCES, INC.

Suzanne Kitch

Suzanne Kitch
Project Coordinator

enclosures

cc: file B790

ANALYTICAL RESOURCES INCORPORATED

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0928
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/09/92 MAC:ctr

VTSR: NA

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: 5 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	2.0 U
74-83-9	Bromomethane	2.0 U
75-01-4	Vinyl Chloride	2.0 U
75-00-3	Chloroethane	2.0 U
75-09-2	**Methylene Chloride**	**3.2**
67-64-1	**Acetone**	**6.5**
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	Trans-1,2-Dichloroethene	1.0 U
156-59-2	Cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	1.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	1.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	0.7 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
1330-20-7	Total Xylenes	2.0 U
75-69-4	Trichlorofluoromethane	2.0 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0 U

Surrogate Recoveries

d8-Toluene	102%
Bromofluorobenzene	106%
d4-1,2-Dichloroethane	101%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0928MR
Matrix: Soils/Sediments

Sample: Method Blank
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/14/92 MAC:ctr

VTSR: NA

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	**Methylene Chloride**	**74 J**
67-64-1	**Acetone**	**630**
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	**2-Butanone**	**490 J**
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	**Toluene**	**480**
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	**Total Xylenes**	**370**
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	98.7%
Bromofluorobenzene	107%
d4-1,2-Dichloroethane	98.0%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0929M
Matrix: Soils/Sediments

Sample: Method Blank
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/14/92 MAC:ctr

VTSR: NA

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: 0.05 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	200 U
74-83-9	Bromomethane	200 U
75-01-4	Vinyl Chloride	200 U
75-00-3	Chloroethane	200 U
75-09-2	Methylene Chloride	200 U
67-64-1	Acetone	500 U
75-15-0	Carbon Disulfide	100 U
75-35-4	1,1-Dichloroethene	100 U
75-34-3	1,1-Dichloroethane	100 U
156-60-5	Trans-1,2-Dichloroethene	100 U
156-59-2	Cis-1,2-Dichloroethene	100 U
67-66-3	Chloroform	100 U
107-06-2	1,2-Dichloroethane	100 U
78-93-3	2-Butanone	500 U
71-55-6	1,1,1-Trichloroethane	100 U
56-23-5	Carbon Tetrachloride	100 U
108-05-4	Vinyl Acetate	100 U
75-27-4	Bromodichloromethane	100 U
78-87-5	1,2-Dichloropropane	100 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	100 U
79-01-6	Trichloroethene	100 U
124-48-1	Dibromochloromethane	100 U
79-00-5	1,1,2-Trichloroethane	100 U
71-43-2	Benzene	100 U
10061-02-6	trans-1,3-Dichloropropene	100 U
110-75-8	2-Chloroethylvinylether	100 U
75-25-2	Bromoform	100 U
108-10-1	4-Methyl-2-Pentanone	500 U
591-78-6	2-Hexanone	500 U
127-18-4	Tetrachloroethene	70 U
79-34-5	1,1,2,2-Tetrachloroethane	100 U
108-88-3	Toluene	100 U
108-90-7	Chlorobenzene	100 U
100-41-4	Ethylbenzene	100 U
100-42-5	Styrene	100 U
1330-20-7	Total Xylenes	200 U
75-69-4	Trichlorofluoromethane	200 U
76-13-1	1,1,2-Trichlorotrifluoroethane	200 U

Surrogate Recoveries

d8-Toluene	97.7%
Bromofluorobenzene	108%
d4-1,2-Dichloroethane	100%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: MB0929
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/12/92 MAC:ctr

VTSR: NA

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: 5 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	2.0 U
74-83-9	Bromomethane	2.0 U
75-01-4	Vinyl Chloride	2.0 U
75-00-3	Chloroethane	2.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	Trans-1,2-Dichloroethene	1.0 U
156-59-2	Cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	1.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	1.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	0.7 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
1330-20-7	Total Xylenes	2.0 U
75-69-4	Trichlorofluoromethane	2.0 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0 U

Surrogate Recoveries

d8-Toluene	97.7%
Bromofluorobenzene	108%
d4-1,2-Dichloroethane	100%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790A
Matrix: Soils/Sediments

Sample: 41805-1

QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/14/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: 6.2 gm (Dry Weight)
Percent Moisture: 6.8%

CAS Number		µg/Kg
74-87-3	*Chloromethane*	*1.6 U*
74-83-9	*Bromomethane*	*1.6 U*
75-01-4	*Vinyl Chloride*	*1.6 U*
75-00-3	*Chloroethane*	*1.6 U*
75-09-2	**Methylene Chloride**	**140 B**
67-64-1	**Acetone**	**140 B**
75-15-0	**Carbon Disulfide**	**1.8 M**
75-35-4	*1,1-Dichloroethene*	*0.8 U*
75-34-3	**1,1-Dichloroethane**	**130**
156-60-5	*Trans-1,2-Dichloroethene*	*0.8 U*
156-59-2	**Cis-1,2-Dichloroethene**	**12**
67-66-3	**Chloroform**	**51**
107-06-2	*1,2-Dichloroethane*	*0.8 U*
78-93-3	**2-Butanone**	**63**
71-55-6	**1,1,1-Trichloroethane**	**54**
56-23-5	*Carbon Tetrachloride*	*0.8 U*
108-05-4	*Vinyl Acetate*	*0.8 U*
75-27-4	*Bromodichloromethane*	*0.8 U*
78-87-5	*1,2-Dichloropropane*	*0.8 U*

CAS Number		µg/Kg
10061-01-5	*cis-1,3-Dichloropropene*	*0.8 U*
79-01-6	**Trichloroethene**	**26**
124-48-1	*Dibromochloromethane*	*0.8 U*
79-00-5	*1,1,2-Trichloroethane*	*0.8 U*
71-43-2	**Benzene**	**73**
10061-02-6	*trans-1,3-Dichloropropene*	*0.8 U*
110-75-8	*2-Chloroethylvinylether*	*0.8 U*
75-25-2	*Bromoform*	*0.8 U*
108-10-1	*4-Methyl-2-Pentanone*	*4.0 U*
591-78-6	*2-Hexanone*	*61 UJ*
127-18-4	**Tetrachloroethene**	**190 K**
79-34-5	*1,1,2,2-Tetrachloroethane*	*0.8 U*
108-88-3	**Toluene**	**SAT**
108-90-7	*Chlorobenzene*	*0.8 U*
100-41-4	**Ethylbenzene**	**880 K**
100-42-5	*Styrene*	*73 UJ*
1330-20-7	**Total Xylenes**	**3900 K**
75-69-4	*Trichlorofluoromethane*	*1.6 U*
76-13-1	**1,1,2-Trichlorotrifluoroethane**	**190 K**

Surrogate Recoveries

d8-Toluene	112%
Bromofluorobenzene	146%
d4-1,2-Dichloroethane	94.3%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790AM
Matrix: Soils/Sediments

Sample: 41805-1
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/14/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: .0075 gm (Dry Weight)
Percent Moisture: 6.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	1300 U
74-83-9	Bromomethane	1300 U
75-01-4	Vinyl Chloride	1300 U
75-00-3	Chloroethane	1300 U
75-09-2	Methylene Chloride	1300 U
67-64-1	Acetone	3300 U
75-15-0	Carbon Disulfide	670 U
75-35-4	1,1-Dichloroethene	670 U
75-34-3	1,1-Dichloroethane	670 U
156-60-5	Trans-1,2-Dichloroethene	670 U
156-59-2	Cis-1,2-Dichloroethene	670 U
67-66-3	Chloroform	670 U
107-06-2	1,2-Dichloroethane	670 U
78-93-3	**2-Butanone**	**4100 B**
71-55-6	1,1,1-Trichloroethane	670 U
56-23-5	Carbon Tetrachloride	670 U
108-05-4	Vinyl Acetate	670 U
75-27-4	Bromodichloromethane	670 U
78-87-5	1,2-Dichloropropane	670 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	670 U
79-01-6	Trichloroethene	670 U
124-48-1	Dibromochloromethane	670 U
79-00-5	1,1,2-Trichloroethane	670 U
71-43-2	Benzene	670 U
10061-02-6	trans-1,3-Dichloropropene	670 U
110-75-8	2-Chloroethylvinylether	670 U
75-25-2	Bromoform	670 U
108-10-1	4-Methyl-2-Pentanone	3300 U
591-78-6	2-Hexanone	3300 U
127-18-4	**Tetrachloroethene**	**1300**
79-34-5	1,1,2,2-Tetrachloroethane	670 U
108-88-3	**Toluene**	**35000 B**
108-90-7	Chlorobenzene	670 U
100-41-4	**Ethylbenzene**	**4800**
100-42-5	Styrene	670 U
1330-20-7	**Total Xylenes**	**35000 B**
75-69-4	Trichlorofluoromethane	1300 U
76-13-1	1,1,2-Trichlorotrifluoroethane	1300 U

Surrogate Recoveries

d8-Toluene	97.8%
Bromofluorobenzene	109%
d4-1,2-Dichloroethane	88.8%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790BM
Matrix: Soils/Sediments

Sample: 41805-2
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: .0092 gm (Dry Weight)
Percent Moisture: 7.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	1100 U
74-83-9	Bromomethane	1100 U
75-01-4	Vinyl Chloride	1100 U
75-00-3	Chloroethane	1100 U
75-09-2	Methylene Chloride	1100 U
67-64-1	**Acetone**	**2800 B**
75-15-0	Carbon Disulfide	540 U
75-35-4	1,1-Dichloroethene	540 U
75-34-3	**1,1-Dichloroethane**	**1700**
156-60-5	Trans-1,2-Dichloroethene	540 U
156-59-2	Cis-1,2-Dichloroethene	540 U
67-66-3	Chloroform	540 U
107-06-2	1,2-Dichloroethane	540 U
78-93-3	**2-Butanone**	**4000 B**
71-55-6	**1,1,1-Trichloroethane**	**410 M**
56-23-5	Carbon Tetrachloride	540 U
108-05-4	Vinyl Acetate	540 U
75-27-4	Bromodichloromethane	540 U
78-87-5	1,2-Dichloropropane	540 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	540 U
79-01-6	Trichloroethene	540 U
124-48-1	Dibromochloromethane	540 U
79-00-5	1,1,2-Trichloroethane	540 U
71-43-2	**Benzene**	**910**
10061-02-6	trans-1,3-Dichloropropene	540 U
110-75-8	2-Chloroethylvinylether	540 U
75-25-2	Bromoform	540 U
108-10-1	4-Methyl-2-Pentanone	2700 U
591-78-6	2-Hexanone	2700 U
127-18-4	**Tetrachloroethene**	**4000**
79-34-5	1,1,2,2-Tetrachloroethane	540 U
108-88-3	**Toluene**	**140000 KB**
108-90-7	Chlorobenzene	540 U
100-41-4	**Ethylbenzene**	**17000**
100-42-5	Styrene	540 U
1330-20-7	**Total Xylenes**	**150000 B**
75-69-4	Trichlorofluoromethane	1100 U
76-13-1	**1,1,2-Trichlorotrifluoroethane**	**6100**

Surrogate Recoveries

d8-Toluene	96.8%
Bromofluorobenzene	116%
d4-1,2-Dichloroethane	97.7%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790BM2
Matrix: Soils/Sediments

Sample: 41805-2 Re-analysis
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: .0037 gm (Dry Weight)
Percent Moisture: 7.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	2700 U
74-83-9	Bromomethane	2700 U
75-01-4	Vinyl Chloride	2700 U
75-00-3	Chloroethane	2700 U
75-09-2	Methylene Chloride	2700 U
67-64-1	Acetone	6800 U
75-15-0	Carbon Disulfide	1400 U
75-35-4	1,1-Dichloroethene	1400 U
75-34-3	**1,1-Dichloroethane**	**1600**
156-60-5	Trans-1,2-Dichloroethene	1400 U
156-59-2	Cis-1,2-Dichloroethene	1400 U
67-66-3	Chloroform	1400 U
107-06-2	1,2-Dichloroethane	1400 U
78-93-3	**2-Butanone**	**6900 B**
71-55-6	1,1,1-Trichloroethane	1400 U
56-23-5	Carbon Tetrachloride	1400 U
108-05-4	Vinyl Acetate	1400 U
75-27-4	Bromodichloromethane	1400 U
78-87-5	1,2-Dichloropropane	1400 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1400 U
79-01-6	Trichloroethene	1400 U
124-48-1	Dibromochloromethane	1400 U
79-00-5	1,1,2-Trichloroethane	1400 U
71-43-2	**Benzene**	**850 J**
10061-02-6	trans-1,3-Dichloropropene	1400 U
110-75-8	2-Chloroethylvinylether	1400 U
75-25-2	Bromoform	1400 U
108-10-1	4-Methyl-2-Pentanone	6800 U
591-78-6	2-Hexanone	6800 U
127-18-4	**Tetrachloroethene**	**3800**
79-34-5	1,1,2,2-Tetrachloroethane	1400 U
108-88-3	**Toluene**	**140000 B**
108-90-7	Chlorobenzene	1400 U
100-41-4	**Ethylbenzene**	**16000**
100-42-5	Styrene	1400 U
1330-20-7	**Total Xylenes**	**130000 B**
75-69-4	Trichlorofluoromethane	2700 U
76-13-1	**1,1,2-Trichlorotrifluoroethane**	**5700**

Surrogate Recoveries

d8-Toluene	93.5%
Bromofluorobenzene	113%
d4-1,2-Dichloroethane	94.0%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Lab ID: B790CM
Matrix: Soils/Sediments

Sample: 41805-3
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/28/92

Amount Analyzed: .0072 gm (Dry Weight)
Percent Moisture: 10.1%

CAS Number		µg/Kg
74-87-3	Chloromethane	1400 U
74-83-9	Bromomethane	1400 U
75-01-4	Vinyl Chloride	1400 U
75-00-3	Chloroethane	1400 U
75-09-2	**Methylene Chloride**	**2300 B**
67-64-1	Acetone	3500 U
75-15-0	**Carbon Disulfide**	**3500**
75-35-4	1,1-Dichloroethene	690 U
75-34-3	1,1-Dichloroethane	690 U
156-60-5	Trans-1,2-Dichloroethene	690 U
156-59-2	Cis-1,2-Dichloroethene	690 U
67-66-3	Chloroform	690 U
107-06-2	1,2-Dichloroethane	690 U
78-93-3	2-Butanone	3500 U
71-55-6	1,1,1-Trichloroethane	690 U
56-23-5	Carbon Tetrachloride	690 U
108-05-4	Vinyl Acetate	690 U
75-27-4	Bromodichloromethane	690 U
78-87-5	1,2-Dichloropropane	690 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	690 U
79-01-6	Trichloroethene	690 U
124-48-1	Dibromochloromethane	690 U
79-00-5	1,1,2-Trichloroethane	690 U
71-43-2	**Benzene**	**380 J**
10061-02-6	trans-1,3-Dichloropropene	690 U
110-75-8	2-Chloroethylvinylether	690 U
75-25-2	Bromoform	690 U
108-10-1	4-Methyl-2-Pentanone	3500 U
591-78-6	2-Hexanone	3500 U
127-18-4	**Tetrachloroethene**	**400 J**
79-34-5	1,1,2,2-Tetrachloroethane	690 U
108-88-3	**Toluene**	**6200 B**
108-90-7	Chlorobenzene	690 U
100-41-4	**Ethylbenzene**	**4100**
100-42-5	Styrene	690 U
1330-20-7	**Total Xylenes**	**29000 B**
75-69-4	Trichlorofluoromethane	1400 U
76-13-1	1,1,2-Trichlorotrifluoroethane	1400 U

Surrogate Recoveries

d8-Toluene	85.7%
Bromofluorobenzene	117%
d4-1,2-Dichloroethane	85.6%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

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B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790DM2
Matrix: Soils/Sediments

Sample: 41805-4 Re-analysis
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .073 gm (Dry Weight)
Percent Moisture: 9.2%

CAS Number		µg/Kg
74-87-3	Chloromethane	140 U
74-83-9	Bromomethane	140 U
75-01-4	Vinyl Chloride	140 U
75-00-3	Chloroethane	140 U
75-09-2	Methylene Chloride	140 U
67-64-1	Acetone	340 U
75-15-0	Carbon Disulfide	69 U
75-35-4	1,1-Dichloroethene	69 U
75-34-3	1,1-Dichloroethane	69 U
156-60-5	Trans-1,2-Dichloroethene	69 U
156-59-2	Cis-1,2-Dichloroethene	69 U
67-66-3	Chloroform	69 U
107-06-2	1,2-Dichloroethane	69 U
78-93-3	2-Butanone	340 U
71-55-6	1,1,1-Trichloroethane	69 U
56-23-5	Carbon Tetrachloride	69 U
108-05-4	Vinyl Acetate	69 U
75-27-4	Bromodichloromethane	69 U
78-87-5	1,2-Dichloropropane	69 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	69 U
79-01-6	Trichloroethene	69 U
124-48-1	Dibromochloromethane	69 U
79-00-5	1,1,2-Trichloroethane	69 U
71-43-2	Benzene	69 U
10061-02-6	trans-1,3-Dichloropropene	69 U
110-75-8	2-Chloroethylvinylether	69 U
75-25-2	Bromoform	69 U
108-10-1	4-Methyl-2-Pentanone	340 U
591-78-6	2-Hexanone	340 U
127-18-4	Tetrachloroethene	48 U
79-34-5	1,1,2,2-Tetrachloroethane	69 U
108-88-3	**Toluene**	**75**
108-90-7	Chlorobenzene	69 U
100-41-4	**Ethylbenzene**	**380**
100-42-5	Styrene	69 U
1330-20-7	**Total Xylenes**	**1100**
75-69-4	Trichlorofluoromethane	140 U
76-13-1	1,1,2-Trichlorotrifluoroethane	140 U

Surrogate Recoveries

d8-Toluene	84.7%
Bromofluorobenzene	108%
d4-1,2-Dichloroethane	89.8%

Data Reporting Qualifiers

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J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790EDL
Matrix: Soils/Sediments

Sample: 41805-5
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .015 gm (Dry Weight)
Percent Moisture: 6.5%

CAS Number		µg/Kg
74-87-3	Chloromethane	670 U
74-83-9	Bromomethane	670 U
75-01-4	Vinyl Chloride	670 U
75-00-3	Chloroethane	670 U
75-09-2	Methylene Chloride	670 U
67-64-1	Acetone	1700 U
75-15-0	Carbon Disulfide	330 U
75-35-4	1,1-Dichloroethene	330 U
75-34-3	1,1-Dichloroethane	330 U
156-60-5	Trans-1,2-Dichloroethene	330 U
156-59-2	Cis-1,2-Dichloroethene	330 U
67-66-3	Chloroform	330 U
107-06-2	1,2-Dichloroethane	330 U
78-93-3	2-Butanone	1700 U
71-55-6	1,1,1-Trichloroethane	330 U
56-23-5	Carbon Tetrachloride	330 U
108-05-4	Vinyl Acetate	330 U
75-27-4	Bromodichloromethane	330 U
78-87-5	1,2-Dichloropropane	330 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	330 U
79-01-6	Trichloroethene	330 U
124-48-1	Dibromochloromethane	330 U
79-00-5	1,1,2-Trichloroethane	330 U
71-43-2	Benzene	330 U
10061-02-6	trans-1,3-Dichloropropene	330 U
110-75-8	2-Chloroethylvinylether	330 U
75-25-2	Bromoform	330 U
108-10-1	4-Methyl-2-Pentanone	1700 U
591-78-6	2-Hexanone	1700 U
127-18-4	Tetrachloroethene	230 U
79-34-5	1,1,2,2-Tetrachloroethane	330 U
108-88-3	**Toluene**	**4600**
108-90-7	Chlorobenzene	330 U
100-41-4	Ethylbenzene	330 U
100-42-5	Styrene	330 U
1330-20-7	**Total Xylenes**	**32000**
75-69-4	Trichlorofluoromethane	670 U
76-13-1	1,1,2-Trichlorotrifluoroethane	670 U

Surrogate Recoveries

d8-Toluene	93.9%
Bromofluorobenzene	112%
d4-1,2-Dichloroethane	84.0%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

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M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790FM
Matrix: Soils/Sediments

Sample: 41805-6
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .036 gm (Dry Weight)
Percent Moisture: 10.8%

CAS Number		µg/Kg
74-87-3	Chloromethane	280 U
74-83-9	Bromomethane	280 U
75-01-4	Vinyl Chloride	280 U
75-00-3	Chloroethane	280 U
75-09-2	Methylene Chloride	280 U
67-64-1	Acetone	690 U
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	140 U
75-34-3	1,1-Dichloroethane	140 U
156-60-5	Trans-1,2-Dichloroethene	140 U
156-59-2	Cis-1,2-Dichloroethene	140 U
67-66-3	Chloroform	140 U
107-06-2	1,2-Dichloroethane	140 U
78-93-3	2-Butanone	690 U
71-55-6	1,1,1-Trichloroethane	140 U
56-23-5	Carbon Tetrachloride	140 U
108-05-4	Vinyl Acetate	140 U
75-27-4	Bromodichloromethane	140 U
78-87-5	1,2-Dichloropropane	140 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	140 U
79-01-6	Trichloroethene	140 U
124-48-1	Dibromochloromethane	140 U
79-00-5	1,1,2-Trichloroethane	140 U
71-43-2	Benzene	140 U
10061-02-6	trans-1,3-Dichloropropene	140 U
110-75-8	2-Chloroethylvinylether	140 U
75-25-2	Bromoform	140 U
108-10-1	4-Methyl-2-Pentanone	690 U
591-78-6	2-Hexanone	690 U
127-18-4	Tetrachloroethene	97 U
79-34-5	1,1,2,2-Tetrachloroethane	140 U
108-88-3	**Toluene**	**780**
108-90-7	Chlorobenzene	140 U
100-41-4	**Ethylbenzene**	**3600**
100-42-5	Styrene	140 U
1330-20-7	**Total Xylenes**	**19000**
75-69-4	Trichlorofluoromethane	280 U
76-13-1	1,1,2-Trichlorotrifluoroethane	280 U

Surrogate Recoveries

d8-Toluene	94.1%
Bromofluorobenzene	110%
d4-1,2-Dichloroethane	94.1%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790GM
Matrix: Soils/Sediments

Sample: 41805-7
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .019 gm (Dry Weight)
Percent Moisture: 5.5%

CAS Number		µg/Kg
74-87-3	Chloromethane	530 U
74-83-9	Bromomethane	530 U
75-01-4	Vinyl Chloride	530 U
75-00-3	Chloroethane	530 U
75-09-2	**Methylene Chloride**	**1100**
67-64-1	Acetone	1300 U
75-15-0	Carbon Disulfide	260 U
75-35-4	1,1-Dichloroethene	260 U
75-34-3	1,1-Dichloroethane	260 U
156-60-5	Trans-1,2-Dichloroethene	260 U
156-59-2	Cis-1,2-Dichloroethene	260 U
67-66-3	Chloroform	260 U
107-06-2	1,2-Dichloroethane	260 U
78-93-3	2-Butanone	1300 U
71-55-6	1,1,1-Trichloroethane	260 U
56-23-5	Carbon Tetrachloride	260 U
108-05-4	Vinyl Acetate	260 U
75-27-4	Bromodichloromethane	260 U
78-87-5	1,2-Dichloropropane	260 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	260 U
79-01-6	Trichloroethene	260 U
124-48-1	Dibromochloromethane	260 U
79-00-5	1,1,2-Trichloroethane	260 U
71-43-2	**Benzene**	**270**
10061-02-6	trans-1,3-Dichloropropene	260 U
110-75-8	2-Chloroethylvinylether	260 U
75-25-2	Bromoform	260 U
108-10-1	4-Methyl-2-Pentanone	1300 U
591-78-6	2-Hexanone	1300 U
127-18-4	Tetrachloroethene	180 U
79-34-5	1,1,2,2-Tetrachloroethane	260 U
108-88-3	**Toluene**	**2100**
108-90-7	**Chlorobenzene**	**290 M**
100-41-4	**Ethylbenzene**	**1200**
100-42-5	Styrene	260 U
1330-20-7	**Total Xylenes**	**6400**
75-69-4	Trichlorofluoromethane	530 U
76-13-1	1,1,2-Trichlorotrifluoroethane	530 U

Surrogate Recoveries

d8-Toluene	93.6%
Bromofluorobenzene	110%
d4-1,2-Dichloroethane	93.7%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790HM
Matrix: Soils/Sediments

Sample: 41805-8
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .038 gm (Dry Weight)
Percent Moisture: 5.6%

CAS Number		µg/Kg
74-87-3	Chloromethane	260 U
74-83-9	Bromomethane	260 U
75-01-4	Vinyl Chloride	260 U
75-00-3	Chloroethane	260 U
75-09-2	Methylene Chloride	260 U
67-64-1	Acetone	660 U
75-15-0	Carbon Disulfide	130 U
75-35-4	1,1-Dichloroethene	130 U
75-34-3	1,1-Dichloroethane	130 U
156-60-5	Trans-1,2-Dichloroethene	130 U
156-59-2	Cis-1,2-Dichloroethene	130 U
67-66-3	Chloroform	130 U
107-06-2	1,2-Dichloroethane	130 U
78-93-3	2-Butanone	1300 U
71-55-6	1,1,1-Trichloroethane	130 U
56-23-5	Carbon Tetrachloride	130 U
108-05-4	Vinyl Acetate	130 U
75-27-4	Bromodichloromethane	130 U
78-87-5	1,2-Dichloropropane	130 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	130 U
79-01-6	Trichloroethene	130 U
124-48-1	Dibromochloromethane	130 U
79-00-5	1,1,2-Trichloroethane	130 U
71-43-2	Benzene	130 U
10061-02-6	trans-1,3-Dichloropropene	130 U
110-75-8	2-Chloroethylvinylether	130 U
75-25-2	Bromoform	130 U
108-10-1	4-Methyl-2-Pentanone	660 U
591-78-6	2-Hexanone	660 U
127-18-4	Tetrachloroethene	92 U
79-34-5	1,1,2,2-Tetrachloroethane	130 U
108-88-3	Toluene	130 U
108-90-7	Chlorobenzene	130 U
100-41-4	**Ethylbenzene**	**940**
100-42-5	Styrene	130 U
1330-20-7	**Total Xylenes**	**4200**
75-69-4	Trichlorofluoromethane	260 U
76-13-1	1,1,2-Trichlorotrifluoroethane	260 U

Surrogate Recoveries

d8-Toluene	93.9%
Bromofluorobenzene	107%
d4-1,2-Dichloroethane	95.3%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790IR
Matrix: Soils/Sediments

Sample: 41805-9
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____ VTSR: 09/23/92
Report: 10/15/92 MAC:ctr

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .076 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	130 U
74-83-9	Bromomethane	130 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	130 U
75-09-2	Methylene Chloride	130 U
67-64-1	**Acetone**	**370**
75-15-0	Carbon Disulfide	70 U
75-35-4	1,1-Dichloroethene	70 U
75-34-3	1,1-Dichloroethane	70 U
156-60-5	Trans-1,2-Dichloroethene	70 U
156-59-2	Cis-1,2-Dichloroethene	70 U
67-66-3	Chloroform	70 U
107-06-2	1,2-Dichloroethane	70 U
78-93-3	2-Butanone	700 U
71-55-6	1,1,1-Trichloroethane	70 U
56-23-5	Carbon Tetrachloride	70 U
108-05-4	Vinyl Acetate	70 U
75-27-4	Bromodichloromethane	70 U
78-87-5	1,2-Dichloropropane	70 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	70 U
79-01-6	Trichloroethene	70 U
124-48-1	Dibromochloromethane	70 U
79-00-5	1,1,2-Trichloroethane	70 U
71-43-2	Benzene	70 U
10061-02-6	trans-1,3-Dichloropropene	70 U
110-75-8	2-Chloroethylvinylether	70 U
75-25-2	Bromoform	70 U
108-10-1	4-Methyl-2-Pentanone	330 U
591-78-6	2-Hexanone	330 U
127-18-4	Tetrachloroethene	46 U
79-34-5	1,1,2,2-Tetrachloroethane	70 U
108-88-3	**Toluene**	**82**
108-90-7	Chlorobenzene	70 U
100-41-4	**Ethylbenzene**	**170**
100-42-5	Styrene	70 U
1330-20-7	**Total Xylenes**	**1700**
75-69-4	Trichlorofluoromethane	130 U
76-13-1	1,1,2-Trichlorotrifluoroethane	130 U

Surrogate Recoveries

d8-Toluene	90.1%
Bromofluorobenzene	106%
d4-1,2-Dichloroethane	93.3%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B790IR

Client: Burlington Env.
Project: P 91

Sample No: 41805-9

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONC (µg/Kg)	MS CONC (µg/Kg)	MS % REC	QC LIMITS REC
1,1-Dichloroethene	3290	0	4820	147	59-172
Trichloroethene	3290	0	3930	119	62-137
Benzene	3290	0	3710	113	66-142
Toluene	3290	81.7	3610	107	59-139
Chlorobenzene	3290	0	3770	115	60-133

COMPOUND	SPIKE ADDED (µg/Kg)	MSD CONC (µg/Kg)	MSD % REC	% RPD	Q C LIMITS RPD	Q C LIMITS REC
1,1-Dichloroethene	3290	4660	142	3.5	22	59-172
Trichloroethene	3290	4120	125	-4.9	24	62-137
Benzene	3290	3840	117	-3.5	21	66-142
Toluene	3290	3430	102	4.8	21	59-139
Chlorobenzene	3290	3670	112	2.6	21	60-133

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Asterisked values outside QC Limits

Comments: *QC Limits taken from CLP OLM01.6 (June 1991)*

Report prepared: 10/12/92 MAC:ctr

FORM III VOA-2

ANALYTICAL RESOURCES INCORPORATED

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790IMS
Matrix: Soils/Sediments

Sample: 41805-9 Matrix Spike
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .076 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	130 U
74-83-9	Bromomethane	130 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	130 U
75-09-2	**Methylene Chloride**	**320**
67-64-1	Acetone	330 U
75-15-0	Carbon Disulfide	66 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	66 U
156-60-5	Trans-1,2-Dichloroethene	66 U
156-59-2	Cis-1,2-Dichloroethene	66 U
67-66-3	**Chloroform**	**82**
107-06-2	1,2-Dichloroethane	66 U
78-93-3	2-Butanone	660 U
71-55-6	1,1,1-Trichloroethane	66 U
56-23-5	Carbon Tetrachloride	66 U
108-05-4	Vinyl Acetate	66 U
75-27-4	Bromodichloromethane	66 U
78-87-5	1,2-Dichloropropane	66 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	66 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	66 U
79-00-5	1,1,2-Trichloroethane	66 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	66 U
110-75-8	2-Chloroethylvinylether	66 U
75-25-2	Bromoform	66 U
108-10-1	4-Methyl-2-Pentanone	330 U
591-78-6	2-Hexanone	330 U
127-18-4	Tetrachloroethene	46 U
79-34-5	1,1,2,2-Tetrachloroethane	66 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	**Ethylbenzene**	**180**
100-42-5	Styrene	66 U
1330-20-7	**Total Xylenes**	**1500**
75-69-4	Trichlorofluoromethane	130 U
76-13-1	1,1,2-Trichlorotrifluoroethane	130 U

Surrogate Recoveries

d8-Toluene	93.2%
Bromofluorobenzene	106%
d4-1,2-Dichloroethane	97.5%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790IMSD
Matrix: Soils/Sediments

Sample: 41805-9 Matrix Spike Dup.
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .076 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	130 U
74-83-9	Bromomethane	130 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	130 U
75-09-2	**Methylene Chloride**	**230**
67-64-1	Acetone	330 U
75-15-0	Carbon Disulfide	66 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	66 U
156-60-5	Trans-1,2-Dichloroethene	66 U
156-59-2	Cis-1,2-Dichloroethene	66 U
67-66-3	Chloroform	66 U
107-06-2	1,2-Dichloroethane	66 U
78-93-3	**2-Butanone**	**430**
71-55-6	1,1,1-Trichloroethane	66 U
56-23-5	Carbon Tetrachloride	66 U
108-05-4	Vinyl Acetate	66 U
75-27-4	Bromodichloromethane	66 U
78-87-5	1,2-Dichloropropane	66 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	66 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	66 U
79-00-5	1,1,2-Trichloroethane	66 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	66 U
110-75-8	2-Chloroethylvinylether	66 U
75-25-2	Bromoform	66 U
108-10-1	4-Methyl-2-Pentanone	330 U
591-78-6	2-Hexanone	330 U
127-18-4	Tetrachloroethene	46 U
79-34-5	1,1,2,2-Tetrachloroethane	66 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	**Ethylbenzene**	**200**
100-42-5	Styrene	66 U
1330-20-7	**Total Xylenes**	**1900**
75-69-4	Trichlorofluoromethane	130 U
76-13-1	1,1,2-Trichlorotrifluoroethane	130 U

Surrogate Recoveries

d8-Toluene	90.2%
Bromofluorobenzene	109%
d4-1,2-Dichloroethane	91.0%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

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B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Lab ID: B790IR
Matrix: Soils/Sediments

Sample: 41805-9
Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .076 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	130 U
74-83-9	Bromomethane	130 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	130 U
75-09-2	Methylene Chloride	130 U
67-64-1	**Acetone**	**370**
75-15-0	Carbon Disulfide	70 U
75-35-4	1,1-Dichloroethene	70 U
75-34-3	1,1-Dichloroethane	70 U
156-60-5	Trans-1,2-Dichloroethene	70 U
156-59-2	Cis-1,2-Dichloroethene	70 U
67-66-3	Chloroform	70 U
107-06-2	1,2-Dichloroethane	70 U
78-93-3	2-Butanone	700 U
71-55-6	1,1,1-Trichloroethane	70 U
56-23-5	Carbon Tetrachloride	70 U
108-05-4	Vinyl Acetate	70 U
75-27-4	Bromodichloromethane	70 U
78-87-5	1,2-Dichloropropane	70 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	70 U
79-01-6	Trichloroethene	70 U
124-48-1	Dibromochloromethane	70 U
79-00-5	1,1,2-Trichloroethane	70 U
71-43-2	Benzene	70 U
10061-02-6	trans-1,3-Dichloropropene	70 U
110-75-8	2-Chloroethylvinylether	70 U
75-25-2	Bromoform	70 U
108-10-1	4-Methyl-2-Pentanone	330 U
591-78-6	2-Hexanone	330 U
127-18-4	Tetrachloroethene	46 U
79-34-5	1,1,2,2-Tetrachloroethane	70 U
108-88-3	**Toluene**	**82**
108-90-7	Chlorobenzene	70 U
100-41-4	**Ethylbenzene**	**170**
100-42-5	Styrene	70 U
1330-20-7	**Total Xylenes**	**1700**
75-69-4	Trichlorofluoromethane	130 U
76-13-1	1,1,2-Trichlorotrifluoroethane	130 U

Surrogate Recoveries

d8-Toluene	90.1%
Bromofluorobenzene	106%
d4-1,2-Dichloroethane	93.3%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Lab ID: B790IMS
Matrix: Soils/Sediments

Sample: 41805-9 Matrix Spike Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .076 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	130 U
74-83-9	Bromomethane	130 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	130 U
75-09-2	**Methylene Chloride**	**320**
67-64-1	Acetone	330 U
75-15-0	Carbon Disulfide	66 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	66 U
156-60-5	Trans-1,2-Dichloroethene	66 U
156-59-2	Cis-1,2-Dichloroethene	66 U
67-66-3	**Chloroform**	**82**
107-06-2	1,2-Dichloroethane	66 U
78-93-3	2-Butanone	660 U
71-55-6	1,1,1-Trichloroethane	66 U
56-23-5	Carbon Tetrachloride	66 U
108-05-4	Vinyl Acetate	66 U
75-27-4	Bromodichloromethane	66 U
78-87-5	1,2-Dichloropropane	66 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	66 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	66 U
79-00-5	1,1,2-Trichloroethane	66 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	66 U
110-75-8	2-Chloroethylvinylether	66 U
75-25-2	Bromoform	66 U
108-10-1	4-Methyl-2-Pentanone	330 U
591-78-6	2-Hexanone	330 U
127-18-4	Tetrachloroethene	46 U
79-34-5	1,1,2,2-Tetrachloroethane	66 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	**Ethylbenzene**	**180**
100-42-5	Styrene	66 U
1330-20-7	**Total Xylenes**	**1500**
75-69-4	Trichlorofluoromethane	130 U
76-13-1	1,1,2-Trichlorotrifluoroethane	130 U

Surrogate Recoveries

d8-Toluene	93.2%
Bromofluorobenzene	106%
d4-1,2-Dichloroethane	97.5%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Lab ID: B790IMSD
Matrix: Soils/Sediments

Sample: 41805-9 Matrix Spike Dup. Medium Level
QC Report No: B790-Burlington Env.
Project: P 91

Data Release Authorized: _____
Report: 10/15/92 MAC:ctr

VTSR: 09/23/92

Instrument: FINN 5
Date Analyzed: 09/29/92

Amount Analyzed: .076 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	130 U
74-83-9	Bromomethane	130 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	130 U
75-09-2	**Methylene Chloride**	**230**
67-64-1	Acetone	330 U
75-15-0	Carbon Disulfide	66 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	66 U
156-60-5	Trans-1,2-Dichloroethene	66 U
156-59-2	Cis-1,2-Dichloroethene	66 U
67-66-3	Chloroform	66 U
107-06-2	1,2-Dichloroethane	66 U
78-93-3	**2-Butanone**	**430**
71-55-6	1,1,1-Trichloroethane	66 U
56-23-5	Carbon Tetrachloride	66 U
108-05-4	Vinyl Acetate	66 U
75-27-4	Bromodichloromethane	66 U
78-87-5	1,2-Dichloropropane	66 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	66 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	66 U
79-00-5	1,1,2-Trichloroethane	66 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	66 U
110-75-8	2-Chloroethylvinylether	66 U
75-25-2	Bromoform	66 U
108-10-1	4-Methyl-2-Pentanone	330 U
591-78-6	2-Hexanone	330 U
127-18-4	Tetrachloroethene	46 U
79-34-5	1,1,2,2-Tetrachloroethane	66 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	**Ethylbenzene**	**200**
100-42-5	Styrene	66 U
1330-20-7	**Total Xylenes**	**1900**
75-69-4	Trichlorofluoromethane	130 U
76-13-1	1,1,2-Trichlorotrifluoroethane	130 U

Surrogate Recoveries

d8-Toluene	90.2%
Bromofluorobenzene	109%
d4-1,2-Dichloroethane	91.0%

Data Reporting Qualifiers

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected at the given detection limit.

J — Indicates an estimated value when result is less than specified detection limit.

B — This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.

K — This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.

M — Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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Analytical
Chemists &
Consultants

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Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B7901R

Client: Burlington Env.
Project: P 91

Sample No: 41805-9

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONC (µg/Kg)	MS CONC (µg/Kg)	MS % REC	QC LIMITS REC
1,1-Dichloroethene	3290	0	4820	147	59-172
Trichloroethene	3290	0	3930	119	62-137
Benzene	3290	0	3710	113	66-142
Toluene	3290	81.7	3610	107	59-139
Chlorobenzene	3290	0	3770	115	60-133

COMPOUND	SPIKE ADDED (µg/Kg)	MSD CONC (µg/Kg)	MSD % REC	% RPD	Q C LIMITS RPD	Q C LIMITS REC
1,1-Dichloroethene	3290	4660	142	3.5	22	59-172
Trichloroethene	3290	4120	125	-4.9	24	62-137
Benzene	3290	3840	117	-3.5	21	66-142
Toluene	3290	3430	102	4.8	21	59-139
Chlorobenzene	3290	3670	112	2.6	21	60-133

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Asterisked values outside QC Limits

Comments: *QC Limits taken from CLP OLM01.6 (June 1991)*

Report prepared: 10/12/92 MAC:ctr

FORM III VOA-2

CHEMPRO
A Burlington Environmental Inc. Company

CHEMICAL PROCESSORS, INC.
Park 90/5, Suite 400
2203 Airport Way South
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE 9-23-92 PAGE 1 OF 2

PROJECT Pier 91 #
CLIENT INFO. CONTACT K. Kreps
ADDRESS
TELEPHONE# 223-7791
SAMPLERS NAME PHONE#
SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) As. Ba. Cd. Cr. Cu. Pb. Ni. Hg. Ag. Se. Tl. Sb. Zn	TCLP ORGANICS	GENERAL CHEMISTRY (Specify)	OTHER (Specify)	NUMBER OF CONTAINERS
1. CP-HA-7-1.5-2	9-16	1000	41805-1	Soil		X											1
2. CP-HA-7-3-3.5	9-16	1015	41805-2			X											1
3. CP-HA-11-1.5-2	9-17	1400	41805-3			X											1
4. CP-HA-11-6-6.5	9-17	1420	41805-4			X											1
5. CP-HA-12-5-5.5	9-17	1320	41805-5			X											1
6. CP-HA-12-6-6.5	9-17	1330	41805-6			X											1
7. CP-HA-10-1.5-2	9-18	1115	41805-7			X											1
8. CP-HA-8-3-3.5	9-18	1315	41805-8			X											1

Relinquished By	Relinquished By	Relinquished By
T. Claus		
Signature T. Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 9-23-92	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By Dan Felkins	Received By	Received By
Signature DAN Felkins	Signature	Signature
Printed Name A.R.I.	Printed Name	Printed Name
Firm 9/23/92 12:30	Firm	Firm
Date/Time	Date/Time	Date/Time

PROJECT INFORMATION
Shipping I.D. No.
VIA
Project

SAMPLE RECEIPT
Total No. of Containers
Chain of Custody Seals
Received in good condition
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS
Low Level Volatiles
~~it TICs~~ NO TIC.
Per Kathy K. Notics
9/24/92 13:20
A.R.I. # B790
(Please Return Cooler) TX

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

CHEMPRO
A Burlington Environmental Inc Company

CHEMICAL PROCESSORS, INC.
Park 90/5, Suite 400
2203 Airport Way South
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE 9-23-92 PAGE 2 OF 2

PROJECT P91 #
CLIENT INFO. CONTACT K. KrePS
ADDRESS
TELEPHONE# 223-7797
SAMPLERS NAME PHONE#
SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) As. Ba. Cd. Cr. Cu. Pb. Ni. Hg. Ag. Se. Tl. Sb. Zn	TCLP ORGANICS	GENERAL CHEMISTRY (Specify)						OTHER (Specify)			NUMBER OF CONTAINERS
1. CP-HA-8-4.5-5	9-18	1325	41805-9	soil		X																		1
2.																								
3.																								
4.																								
5.																								
6.																								
7.																								
8.																								

Relinquished By	Relinquished By	Relinquished By
T. Claus		
Signature T-Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 9-23-92 10:04	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By Jan Felkins	Received By	Received By
Signature Jan Felkins	Signature	Signature
Printed Name A.R.I.	Printed Name	Printed Name
Firm 9/23/92 12:30	Firm	Firm
Date/Time	Date/Time	Date/Time

PROJECT INFORMATION
Shipping I.D. No.
VIA
Project

SAMPLE RECEIPT
Total No. of Containers
Chain of Custody Seals
Received in good condition
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS
Low Level volatiles
~~PTIES~~ NOT. Hagen 9/24/92 13:20
(Please return coder) TY

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

CHEMPRO
A Burlington Environmental Inc Company

CHEMICAL PROCESSORS, INC.
Park 90/5, Suite 400
2203 Airport Way South
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE 9-23-92 PAGE 1 OF 2

PROJECT Pier 91 #
CLIENT INFO. CONTACT K. Kreps
ADDRESS
TELEPHONE# 223-7791
SAMPLERS NAME PHONE#
SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) As. Ba. Cd. Cr. Cu. Pb. Ni. Hg. Ag. Se. Tl. Sb. Zn	TCLP ORGANICS	GENERAL CHEMISTRY (Specify)						OTHER (Specify)			NUMBER OF CONTAINERS
1. CP-11A-7-1.5-2	9-16	1000	41805-1	Soil		X																		1
2. CP-11A-7-3-3.5	9-16	1015	41805-2			X																		1
3. CP-11A-11-1.5-2	9-17	1400	41805-3			X																		1
4. CP-11A-11-6-6.5	9-17	1420	41805-4			X																		1
5. CP-11A-12-5-5.5	9-17	1320	41805-5			X																		1
6. CP-11A-12-6-6.5	9-17	1330	41805-6			X																		1
7. CP-11A-10-1.5-2	9-18	1115	41805-7			X																		1
8. CP-11A-8-3-3.5	9-18	1315	41805-8			X																		1

Relinquished By	Relinquished By	Relinquished By
T. Claus		
Signature T. Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 9-23-92	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By	Received By	Received By
Signature	Signature	Signature
Printed Name	Printed Name	Printed Name
Firm	Firm	Firm
Date/Time	Date/Time	Date/Time

PROJECT INFORMATION
Shipping I.D. No.
VIA
Project

SAMPLE RECEIPT
Total No. of Containers
Chain of Custody Seals
Received in good condition
LAB NO.

SPECIAL INSTRUCTIONS/COMMENTS
Low Level Volatiles + TICs

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

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CHEMICAL PROCESSORS, INC.
Park 90/5, Suite 400
2203 Airport Way South
Seattle, WA 98134
206-223-0500 • FAX: 223-7791

Chain of Custody/ Laboratory Analysis Request

DATE 9-23-92 PAGE 2 OF 2

PROJECT P91 #
CLIENT INFO. CONTACT K. Kreps
ADDRESS
TELEPHONE# 223-7797
SAMPLERS NAME PHONE#
SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) As. Ba. Cd. Cr. Cu. Pb. Ni. Hg. Ag. Se. Tl. Sb. Zn	TCLP ORGANICS	GENERAL CHEMISTRY (Specify)					OTHER (Specify)			NUMBER OF CONTAINERS
1. CP-11A-8-4.5-5	9-18	B25	418605-9	soil		X																	1
2.																							
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							

Relinquished By	Relinquished By	Relinquished By	PROJECT INFORMATION	SAMPLE RECEIPT
T. Claus				
Signature T. Claus	Signature	Signature	Shipping I.D. No.	Total No. of Containers
Printed Name BEI	Printed Name	Printed Name		Chain of Custody Seals
Firm 9-23-92 10:04	Firm	Firm	VIA	Received in good condition
Date/Time	Date/Time	Date/Time	Project	LAB NO.
Received By	Received By	Received By	SPECIAL INSTRUCTIONS/COMMENTS	
Signature	Signature	Signature	Low Level volatiles + TICs	
Printed Name	Printed Name	Printed Name		
Firm	Firm	Firm		
Date/Time	Date/Time	Date/Time		

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

Client: Burl ENV.	Project #: Project: Pier 91	
Client Contact: Kathy Kreps	PO#: 41805	Logged in by: G.F.

Sample Acknowledgement

Page 1 of 1

ARI Job Number: B790	
VTSR: 9/23/92	Turn-Around: 10/23/92
	Requested TA:

Billing Address:

Date of Transmittal: 9/24/92 Time: 16:20

Addressee: Kathy Kreps Fax No:

Company: Burl ENV. Phone No:

Analytical Resources, Inc.
(206) 621-6490
(206) 621-7523 - fax

Following is a list of samples received and logged in at ARI.
Please verify information listed.
If there are discrepancies, contact ARI Lab Contact.

ARI Lab Contact: Suzanne Kitch
(Please call this person with questions.)

	SMO/CLIENT SAMPLE ID:	ARI ID NO	Sample Matrix	#Bottles per sample
1	41805-1	B790 A	Soil	1 2oz gl.
2	41805-2	B	↓	↓
3	41805-3	C		
4	41805-4	D		
5	41805-5	E		
6	41805-6	F		
7	41805-7	G		
8	41805-8	H		
9	41805-9	I	✓	✓
10				

NO Samples	Matrix	Parameter	Meth No	Estimated Cost Per Sample	Estimated Extended Costs
9	Soil	VOA	8240	225.00	$2025.00
				TOTAL	$2025.00

THIS IS NOT AN INVOICE

ARI 06/1/90

NOTE Unless arrangements for storage/archiving are made for this project, water samples will be disposed of 60 days (VOA waters 30 day's) after sample receipt. (Opened volatile waters will be disposed of after analysis). Soil samples will be disposed of 90 days after sample receipt (VOA soils will be 60 days).