RCRA PERMIT
ADMINISTRATIVE RECORD
ITEM NUMBER
TOTAL NUMBER OF PAGES

WA 2917
1·27·93
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FILE COPY

PROJECT MEMORANDUM

DATE: January 27, 1993

TO: Joe Depner, Hydrogeologist

FROM: Nels Cone, Chemist

SUBJECT: DATA VALIDATION OF ANALYTICAL RESULTS FROM PIER 91 RCRA FACILITY INVESTIGATION, PROJECT 624878, DATA SET #5B

Between September 28 to October 11, 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. Overflow analyses from the Corporate Laboratory and samples receiving volatile compound (EPA SW-846 Method 8240) analysis were submitted to Analytical Resources Inc. (ARI) of Seattle, Washington. I performed a review of the analytical results on the samples listed below:

CP-HA-4-1.5-2	CP-111-2-4	CP-113-6-8	CP-116-2-4	CP-922A-6-8
CP-HA-4-3-3.5	CP-111-2-6	CP-114-2-4	CP-116-6-8	CP-122A-14-16
CP-HA-9-1.5-2	CP-112-2-4	CP-114-6-8	CP-916-6-8	CP-121-2-4
CP-HA-10-4.5-5	CP-112-6-8	CP-115A-2-4	CP-122A-2-4	CP-121-6-8
CP-HA-10-5-5.5	CP-113-2-4	CP-115A-6-8	CP-122A-6-8	CP-118-2-4
				CP-118-6-8

Properly completed chain-of-custody forms were included, along with documented signatures from field to laboratory receipt. All holding times were clearly written and evaluated according to regulatory protocol (*National Functional Guidelines for Organic Data Review*, USEPA, 1990). Samples were shown as having been properly iced except for all samples that were transferred from the Corporate Laboratory to ARI. According to the established guidelines, all values being reported from ARI should be considered as *estimates* only.

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-9-1.5-2, CP-116-2-4, CP-116-6-8, and CP-916-6-8. 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 relative percent differences (RPD) consistently within analytical advisory range. Sample and method blank analyses displayed surrogate recoveries well within required QC limits. Matrix spike analyses and certified control standards (when provided) met the expected precision and accuracy guidelines.

USEPA RCRA
3012494

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 sample and method blank surrogate recoveries met within acceptable QC limits. Matrix spike/matrix spike duplicate analyses displayed RPDs within precision guidelines and acceptable QC limits.

Volatile analysis of sample CP-111-2-6 (ARI #42283-3) was reported as a duplicate analysis. The second analysis shows 2-butanone, while the first analysis did not. However, when this sample was used as a matrix spike and matrix spike duplicate, 2-butanone consistently was identified. In regards to the presence of 2-butanone, the second analysis is considered the more representative analysis.

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/b42:1951b.mem

42266

Burlington
Environmental

December 3, 1992

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

Burlington Environmental Corporate Laboratory #42266
Project: Pier 91 Drilling, Project #624878

Dear Joe:

Nine soil samples for the Pier 91 Drilling Project #624878 were received at our laboratory October 9, 1992. These samples were received in good condition. The samples were analyzed for total metals at the Burlington Environmental Corporate Laboratory and Volatiles and PCBs were anlayzed on the same samples by Analytical Resources Inc (ARI). This ARI sample set (B972) was batched with B971 (Burlington laboratory number 42283). The MS and MSD results from sample set B971 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.

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 : 42266

Plant/Generator Name : Pier 91 Drilling Project #624878
Sample Type : Soils
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 12/02/92 QC Checked: _____
Parameters for Analysis: Total Metals, PCBs, Volatiles
Outside Lab : ARI Outside Lab Report No: B972

Data:

These nine soil samples from the Pier 91 Drilling Project #624878, samples CP-121-2-4, CP-121-6-8, CP-114-2-4, CP-114-6-8, CP-115A-2-4, CP-115A-6-8, CP-122A-2-4, CP-122A-6-8, and CP-922A-6-8 were analyzed for Total Metals by the Burlington Environmental Corporate Laboratory and for PCBs and Volatiles by Analytical Resources Inc. Copies of all 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. 6078

PROJECT NAME PIER 91 RFI
PROJECT NUMBER 624878 MAJOR TASK
SAMPLERS J. Pence G. Woods
LAB DESTINATION BET

SAMPLE NO.	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	TYPE OF ANALYSIS: TOTAL METALS	PCBs	VOCs						PRESERVATIVES: ICED	CHEMICALS ADDED	REMARKS (CHEMICAL ANALYSIS REQUEST FORM NUMBER IF APPLICABLE)
422616-1	10-7	940		X	CP-121-2-4	2	↓	↓	↓						↓		
-2	10-7	1010		X	CP-121-6-8												
-3	10-8	0830		X	CP-114-2-4												
-4	10-8	0850		X	CP-111-6-8												
-5	10-8	1300		X	CP-115A-2-4												
-6	10-8	1335		X	CP-115A-6-8												
-7	10-9	0900		X	CP-122A-2-4												
-8	10-9	0922		X	CP-122A-6-8												
-9	10-9	0922		X	CP-922A-6-8	↓	↓	↓	↓						↓		

RELINQUISHED BY SIGNATURE	DATE	TIME	RECEIVED BY SIGNATURE	DATE	TIME
J. Pence	10-9	1600	Barbara Walker	10/9	4:05

SHIPPING NOTES

LAB NOTES

BE-34 (1/92)

Metals Laboratory Report

Lab Number : 42266

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked: 11/9/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	42266-1 CP-121-2-4	42266-2 CP-121-6-8	42266-3 CP-114-2-4	42266-4 CP-114-6-8
Silver	<0.40	<0.44	<0.43	<0.44
Arsenic	2.6	1.7	2.8	2.6
Barium	22.2	17.7	29.9	35.1
Beryllium	0.24	0.39	0.35	0.38
Cadmium	0.20	0.28	0.32	0.36
Chromium	13.9	19.1	18.6	17.0
Copper	5.6	7.8	14.9	13.7
Mercury	<0.019	<0.018	0.098	0.079
Nickel	15.1	24.8	22.3	21.5
Lead	3.6	1.9	23.3	13.5
Selenium	<0.44	<0.86	<0.45	<0.42
Zinc	22.4	30.2	77.0	62.2
Dry Weight	94.9%	88.9%	96.4%	92.4%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

Metals Laboratory Report

Lab Number : 42266

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked: 11/9/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	42266-5 CP-115A-2-4	42266-6 CP-115A-6-8	42266-7 CP-122A-2-4	42266-8 CP-122A-6-8
Silver	<0.40	<0.38	<0.44	<0.41
Arsenic	1.6	2.0	2.1	2.0
Barium	103.	13.3	36.5	31.3
Beryllium	0.35	0.23	0.35	0.39
Cadmium	0.34	<0.19	0.26	0.29
Chromium	9.9	13.5	20.0	26.9
Copper	29.9	5.0	11.1	13.3
Mercury	<0.019	<0.018	0.025	0.15
Nickel	13.6	17.7	29.5	31.6
Lead	11.1	10.8	5.7	7.4
Selenium	<0.41	<0.45	<0.37	<0.43
Zinc	31.5	15.4	29.2	31.7
Dry Weight	93.7%	85.3%	91.6%	86.5%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

Metals Laboratory Report

Lab Number : 42266

Plant/Generator Name : PIER 91 DRILLING PROJECT # 624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked: BBB 11/9/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	42266-9 CP-922A-6-8	METHOD BLANK IN MG/L.	CONTROL SAMPLE PPS-46	CONTROL SAMPLE % RECOVERY
Silver	<0.40	<0.010	30.8	83.2
Arsenic	1.8	<0.010	17.8	118.7
Barium	29.6	<0.20	112.	83.6
Beryllium	0.40	<0.005	12.9	86.0
Cadmium	0.33	<0.005	88.0	80.7
Chromium	20.5	<0.010	40.4	98.5
Copper	16.9	<0.025	18.2	91.0
Mercury	0.039	<0.0002	5.22*	87.0
Nickel	28.4	<0.040	25.9	92.5
Lead	8.0	<0.003	62.9	85.0
Selenium	<0.99	<0.005	88.2	96.9
Zinc	29.8	<0.020	47.6	89.8

Dry Weight 85.4%

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.
DATES ANALYZED:10/20/92, 10/23/92, 10/28/92.
MERCURY ANALYZED: 10/27/92.
*MERCURY CONTROL SAMPLE WAS SRS003.

Metals Laboratory Report

Lab Number : 42266Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked: 11/10/92
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			104.0	103.2
Arsenic	108.9		104.5	94.6
Barium			103.4	104.3
Beryllium			101.2	101.6
Cadmium			102.2	101.4
Chromium			102.5	103.0
Copper			103.9	103.0
Nickel			104.3	102.2
Lead	95.3	98.0	104.8	96.8
Selenium	99.6	94.3	108.0	100.4
Zinc			101.4	100.2

Comments and Conclusions:

RESULTS ARE PERCENT RECOVERY.

Metals Laboratory Report

Lab Number : 42266Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked:
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	105.0	105.6		
Arsenic	94.0	98.0	104.0	101.1
Barium	104.3	105.3		
Beryllium	103.2	104.9		
Cadmium	105.9	106.7		
Chromium	105.1	105.7		
Copper	104.0	105.3		
Nickel	104.7	107.2		
Lead	104.2	105.7	102.8	103.6
Selenium	103.8	109.8	93.1	98.2
Zinc	101.9	104.4		

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

Metals Laboratory Report

Lab Number : 42266Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked:
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	% RECOVERY CCV	CCV
Arsenic	100.4	99.4
Lead	102.4	101.6
Selenium	104.7	92.0

Comments and Conclusions:

RESULTS ARE IN PERCENT RECOVERY.

Metals Laboratory Report

Lab Number : 42266Q

Plant/Generator Name : PIER 91 DRILLING PROJECT #624878
Sample Type : SOILS
Date of Receipt : 10/09/92 Analyst: BLW, BB, JLB
Date of Report : 11/06/92 QC Checked: 11/5/92
Parameters for Analysis: TOTAL METALS
Outside Lab : NONE Outside Lab Report No:

METALS BY SW-846 3050, 6010, 7000.

Metals:	42266-1 MS % RECOVERY	42266-1 MSD % RECOVERY	42266-1 PDS % RECOVERY
Silver	73.3	81.7	
Arsenic	73.1	81.9	
Barium	87.2	87.5	
Beryllium	91.1	92.8	
Cadmium	88.6	88.9	
Chromium	64.2	66.3	89.8
Copper	100.0	95.2	
Mercury	103.5	115.3	
Nickel	96.5	88.9	
Lead	86.6	84.1	
Selenium	27.0	32.0	
Zinc	91.6	86.5	

Comments and Conclusions:

RESULTS ARE REPORTED AS MG/KG DRY WEIGHT.

12 November 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 #B971, B972

Dear Ms. Kreps:

Please find enclosed the original chain-of-custody (COC) records and results for the above referenced project. Sixteen soil samples were received in good condition on 10/14/92, with no discrepancies in the paperwork. The analyses proceeded without incident of note, according to the Pier 91 statement of work (special detection limits noted).

PCBs were analyzed by GC/ECD method 8080, with a detection limit of 0.033 ppm (reported as 33 ppb). A copy of the matrix spike/matrix spike duplicate recovery report from ARI Job No. B960 is included as batch QC for this job.

Analysis for volatile organic compounds was done by accepted GC/MS purge and trap methodology. The instrument used was calibrated to achieve a tetrachloroethene detection limit of 0.7 ppb. Several of the samples required analysis at medium level due to high background matrix interference, however; please note that reported detection limits are based on the amount of sample analyzed, on a dry weight basis. Samples **42283-3** and **42283-4** were used as QC samples for medium and low level analyses, respectively, and MS/MSD recovery reports are included for both.

All raw data and a copy of this package will be kept on file at ARI should you need any further information or copies of documentation regarding this project. Also, if you have questions, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Kate Stegemoeller

Kate Stegemoeller
Project Coordinator
206-340-2866, ext. 117

enclosures
cc: file B971, B972

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

Chain of Custody/ Laboratory Analysis Request

DATE 10-14 PAGE 1 OF 1

PROJECT P91 #
CLIENT INFO. CONTACT K. Kreis
CHEMPRO DIVISION/GENERATOR NAME B.E.T.
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-122A-14-16	10-9	1240	42283-1	Soil		X	X															2	
2. CP-111-2-4	10-10		42283-2	Soil		X	X															2	
3. CP-111-2-6	~~10-10~~ 10-10	1000	42283-3	Soil		X	X															2	
4. CP-112-2-4			42283-4	Soil		X	X															2	
5. CP-112-6-8		1600	42283-5	Soil		X	X															2	
6. CP-113-2-4			42283-6	Soil		X	X															2	
7. CP-113-6-8			42283-7	Soil		X	X															2	
8.																							

Relinquished By	Relinquished By	Relinquished By
Signature Ti Claus	Signature	Signature
Printed Name B.E.T.	Printed Name	Printed Name
Firm 10-14-92 9:15	Firm	Firm
Date/Time	Date/Time	Date/Time

Received By	Received By	Received By
Signature Jan Felkins	Signature	Signature
Printed Name A.R.I.	Printed Name	Printed Name
Firm 10/14/92 15:30	Firm	Firm
Date/Time	Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Pier 91 Project Detection limits

A.R.I. # B971

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 10-14-92 PAGE 1 OF 2

PROJECT Pier 91 #
CLIENT INFO. CONTACT K. Kreps
CHEMPRO DIVISION/GENERATOR NAME
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	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-121-2-4	10-7	940	42266-1	soil		X	X															2	
2 CP-121-6-8	10-7	1010	42266-2	soil		X	X															2	
3 CP-114-2-4	10-8	0830	42266-3	soil		X	X															2	
4 CP-114-6-8	10-8	0850	42266-4	soil		X	X															2	
5 CP-115A-2-4	10-8	1300	42266-5	soil		X	X															2	
6 CP-115A-6-8	10-8	1335	42266-6	soil		X	X															2	
7 CP-122A-2-4	10-9	0950	42266-7	soil		X	X															2	
8 CP-122A-6-8	10-9	0920	42266-8	soil		X	X															2	

Relinquished By	Relinquished By	Relinquished By
T. Claus		
Signature T. Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 10-14-92	Firm	Firm
Date/Time	Date/Time	Date/Time
Received By	**Received By**	**Received By**
Jan Felkins		
Signature JAN Felkins	Signature	Signature
Printed Name A.R.I.	Printed Name	Printed Name
Firm 10/14/92 15:30	Firm	Firm
Date/Time	Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Pier 91 Project
Detection Limits

Cooler Temp 20°C

A.R.I. # B972

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 10-14-92 PAGE 2 OF 2

PROJECT P91 #
CLIENT INFO. CONTACT K. KrePS
CHEMPRO DIVISION/GENERATOR NAME BET
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-922A-68	10-9	0820	42206-9	soil		X	X															2	
2.																							
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							

Relinquished By	Relinquished By	Relinquished By
Signature T. Claus	Signature	Signature
Printed Name BET	Printed Name	Printed Name
Firm 10-14-92 (9 A.)	Firm	Firm
Date/Time	Date/Time	Date/Time

Received By	Received By	Received By
Signature Jan Felkins	Signature	Signature
Printed Name JAN Felkins	Printed Name	Printed Name
Firm A.R.I.	Firm	Firm
Date/Time 10/14/92 15:30	Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Pier91 Project Detection Limits

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

(LAB-200 Rev. 10/90)

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
PCB Analysis by GC/ECD

QC Report: B971 - Burlington

Matrix: Soil

Date Received: 10/14/92

Data Release Authorized
Report prepared: 11/12/92 MAC:D sk

GPC Cleanup: Yes
Florisil Cleanup: Yes
Acid Cleanup: No

Reported in µg/kg (ppb)

Sample #:	Meth. Blk.	42283-1	42283-2	42283-3	42283-4	42283-5	42283-6	42283-7
ARI Lab ID:	*1015mb*	*B971A*	*B971B*	*B971C*	*B971D*	*B971E*	*B971F*	*B971G*
Date Extracted:	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*
Date Analyzed:	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*
Sample Amount:	*30.0 g*	*29.1 g*	*32.7 g*	*33.5 g*	*32.3 g*	*28.8 g*	*33.7 g*	*29.6 g*
Final volume:	*10 ml.*	*10 ml.*	*10 ml.*	*10 ml.*	*10 ml.*	*10 ml.*	*10 ml.*	*10 ml.*
Dilution:	*1:1*	*1:1*	*1:1*	*1:1*	*1:1*	*1:1*	*1:1*	*1:1*
1016/1242	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1248	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1254	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1260	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1232	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
TCMX Surrogate %	*77.1%*	*73.5%*	*72.5%*	*58.4%*	*69.5%*	*84.5%*	*77.2%*	*68.9%*
DCBP Surrogate %	*101%*	*100%*	*91.4%*	*78.6%*	*97.6%*	*103%*	*98.5%*	*94.7%*

Data Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
J	Indicates an estimated value when that value is less than the calculated detection limit.
U	Indicates compound was analyzed for, but not detected at the given detection limit.
X	Indicates value above the linear range of the detector. Dilution required.
D	Indicates surrogate was diluted out.
S	Indicates no value reported due to saturation of the detector. Dilution required.
NR	Not reported due to matrix interference.

FORM 1-PCB

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ORGANICS ANALYSIS DATA SHEET
PCB Analysis by GC/ECD

QC Report: B972-Burlington Env.
Date Received: 10/14/92

Matrix: Soils

GPC Cleanup: Yes
Florisil Cleanup: Yes
Acid Cleanup: No

Data Release Authorized
Report prepared: 11/12/92 - MAC:C pat

Reported in ppb (µg/kg)

Sample #:	**Method Blank**	**42266-1**	**42266-2**	**42266-3**	**42266-4**
ARI Lab ID:	*B971MB*	*B972A*	*B972B*	*B972C*	*B972D*
Date Extracted:	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*
Date Analyzed:	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*
Dry Weight:	*30.0 g*	*33.5 g*	*31.2 g*	*34.1 g*	*32.2 g*
Final Volume:	*10 mls*	*10 mls*	*10 mls*	*10 mls*	*10 mls*
Dilution:	*1:1*	*1:1*	*1:1*	*1:1*	*1:1*
1016/1242	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1248	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1254	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1260	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1232	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
TCMX Surrogate %	*77.1%*	*85.9%*	*70.6%*	*82.1%*	*83.2%*
DCBP Surrogate %	*109%*	*103%*	*99.7%*	*90.3%*	*96.9%*

Sample #:	**42266-5**	**42266-6**	**42266-7**	**42266-8**	**42266-9**
ARI Lab ID:	*B972E*	*B972F*	*B972G*	*B972H*	*B972I*
Date Extracted:	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*	*10/15/92*
Date Analyzed:	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*	*10/23/92*
Dry Weight:	*34.8 g*	*29.2 g*	*33.6 g*	*31.4 g*	*30.6 g*
Final Volume:	*10 mls*	*10 mls*	*10 mls*	*10 mls*	*10 mls*
Dilution:	*1:1*	*1:1*	*1:1*	*1:1*	*1:1*
1016/1242	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1248	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1254	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1260	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
1232	*33 U*	*33 U*	*33 U*	*33 U*	*33 U*
TCMX Surrogate %	*78.4%*	*62.1%*	*81.8%*	*82.4%*	*77.9%*
DCBP Surrogate %	*93.9%*	*85.5%*	*100%*	*104%*	*101%*

Data Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
J	Indicates an estimated value when that value is less than the calculated detection limit.
U	Indicates compound was analyzed for, but not detected at the given detection limit.
X	Indicates value above the linear range of the detector. Dilution required.
D	Indicates surrogate was diluted out of the sample
NR	Indicates no recovery due to matrix interference and/or dilution.
S	Indicates saturation of the detector. Dilution required.

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PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B960
Client ID:
ARI Sample No: B960AD
Matrix: Soils

Client:
Project
VTSR: 10/13/92
Report Prepared: MAC:D sk

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONCENTRATION (µg/Kg)	MATRIX SPIKE CONCENTRATION (µg/Kg)	MS % RECOVERY
Arochlor 1242	410	0	386	94.1

COMPOUND	SPIKE ADDED (µg/Kg)	MATRIX SPIKE DUP CONCENTRATION (µg/Kg)	MS % (µg/Kg)	% RPD
Arochlor 1242	429	399	93.0	1.2

	SURROGATE % RECOVERY	
	MS	MSD
TCMX	66.7	68.9
DCBP	NR	NR

Comments:

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SOIL PCB BLANK MATRIX SPIKE RECOVERY

ARI Job No: B972

Client: Burlington Env.
Project: Pier 91

COMPOUND	SPIKE ADDED (mg/kg)	MS CONC (mg/kg)	MS % REC	QC LIMITS REC
Aroclor 1242	333	261	78.4	45-124

	Surrogate % rec.	QC Limits
TCMX	85.9%	36-134
DCBP	110%	36-148

Spike Recovery: 0 out of 1 outside limits
Surrogate Recovery: 0 out of 2 outside limits

Asterisked values outside QC Limits

Comments:

Report prepared: 11/12/92 MAC:C pat

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

Lab ID: mb1015
Matrix: Soils/Sediments

Sample: **Method Blank**

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: NA

Instrument: FINN 5
Date Analyzed: 10/15/92

Amount Analyzed: 5.0 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**	**1.8 J**
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	108%
Bromofluorobenzene	101%
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: mb1015m
Matrix: Soils/Sediments

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

Sample: Method Blank - Medium

QC Report No: B971 - Burlington
Project: Pier 91

VTSR: NA

Instrument: FINN 5
Date Analyzed: 10/15/92

Amount Analyzed: 0.040 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	250 U
74-83-9	Bromomethane	250 U
75-01-4	Vinyl Chloride	250 U
75-00-3	Chloroethane	250 U
75-09-2	Methylene Chloride	250 U
67-64-1	**Acetone**	**510 J**
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	630 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	630 U
591-78-6	2-Hexanone	630 U
127-18-4	Tetrachloroethene	88 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	130 U
100-42-5	Styrene	130 U
1330-20-7	Total Xylenes	250 U
75-69-4	Trichlorofluoromethane	250 U
76-13-1	1,1,2-Trichlorotrifluoroethane	250 U

Surrogate Recoveries

d8-Toluene	107%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	98.7%

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: B971Cm
Matrix: Soils/Sediments

Sample: 42283-3

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/15/92

Amount Analyzed: 0.037 gm (Dry Weight)
Percent Moisture: 8.7%

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	270 U
67-64-1	**Acetone**	**1300 B**
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**	**1000**
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	140 U
108-90-7	Chlorobenzene	140 U
100-41-4	Ethylbenzene	140 U
100-42-5	Styrene	140 U
1330-20-7	Total Xylenes	270 U
75-69-4	Trichlorofluoromethane	270 U
76-13-1	1,1,2-Trichlorotrifluoroethane	270 U

Surrogate Recoveries

d8-Toluene	100%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	96.7%

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: B971Cms
Matrix: Soils/Sediments

Sample: 42283-3 - Medium Matrix Spike
QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/15/92

Amount Analyzed: 0.037 gm (Dry Weight)
Percent Moisture: 8.7%

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**	**1700**
67-64-1	**Acetone**	**650 JB**
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	-
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**	**120 J**
107-06-2	1,2-Dichloroethane	140 U
78-93-3	**2-Butanone**	**780**
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	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	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	140 U
100-42-5	Styrene	140 U
1330-20-7	Total Xylenes	270 U
75-69-4	Trichlorofluoromethane	270 U
76-13-1	1,1,2-Trichlorotrifluoroethane	270 U

Surrogate Recoveries

d8-Toluene	99.7%
Bromofluorobenzene	108%
d4-1,2-Dichloroethane	98.8%

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: B971Cmsd
Matrix: Soils/Sediments

Sample: 42283-3 - Medium Matrix Spike Duplicate
QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/15/92

Amount Analyzed: 0.037 gm (Dry Weight)
Percent Moisture: 8.7%

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**	**1300**
67-64-1	**Acetone**	**580 JB**
75-15-0	Carbon Disulfide	140 U
75-35-4	1,1-Dichloroethene	-
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**	**120 J**
107-06-2	1,2-Dichloroethane	140 U
78-93-3	**2-Butanone**	**2800**
71-55-6	**1,1,1-Trichloroethane**	**1300**
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	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	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	140 U
100-42-5	Styrene	140 U
1330-20-7	Total Xylenes	270 U
75-69-4	Trichlorofluoromethane	270 U
76-13-1	1,1,2-Trichlorotrifluoroethane	270 U

Surrogate Recoveries

d8-Toluene	92.4%
Bromofluorobenzene	98.6%
d4-1,2-Dichloroethane	93.1%

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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(206) 621-7523 (FAX)

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B971

Client: Burlington
Project: Pier 91

Sample No: 42283-3

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONC (µg/Kg)	MS CONC (µg/Kg)	MS % REC	QC LIMITS REC
1,1-Dichloroethene	6760	0	11900	176 *	59-172
Trichloroethene	6760	0	9180	136	62-137
Benzene	6760	0	8960	133	66-142
Toluene	6760	0	7980	118	59-139
Chlorobenzene	6760	0	7530	111	60-133

COMPOUND	SPIKE ADDED (µg/Kg)	MSD CONC (µg/Kg)	MSD % REC	% RPD	Q C LIMITS	
					RPD	REC
1,1-Dichloroethene	6760	10100	149	17	22	59-172
Trichloroethene	6760	8640	128	6.1	24	62-137
Benzene	6760	8170	121	9.4	21	66-142
Toluene	6760	8790	130	-9.7	21	59-139
Chlorobenzene	6760	7220	107	3.7	21	60-133

RPD: 0 out of 5 outside limits
Spike Recovery: 1 out of 10 outside limits

Asterisked values outside QC Limits

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

Report prepared: 11/10/92 MAC:D sk

FORM III VOA-2

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

Lab ID: B971Gm
Matrix: Soils/Sediments

Sample: 42283-7

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/15/92

Amount Analyzed: 0.0067 gm (Dry Weight)
Percent Moisture: 16.4%

CAS Number		µg/Kg
74-87-3	Chloromethane	1500 U
74-83-9	Bromomethane	1500 U
75-01-4	Vinyl Chloride	1500 U
75-00-3	Chloroethane	1500 U
75-09-2	Methylene Chloride	1500 U
67-64-1	Acetone	3700 U
75-15-0	Carbon Disulfide	750 U
75-35-4	1,1-Dichloroethene	750 U
75-34-3	1,1-Dichloroethane	750 U
156-60-5	Trans-1,2-Dichloroethene	750 U
156-59-2	Cis-1,2-Dichloroethene	750 U
67-66-3	Chloroform	750 U
107-06-2	1,2-Dichloroethane	750 U
78-93-3	2-Butanone	3700 U
71-55-6	1,1,1-Trichloroethane	750 U
56-23-5	Carbon Tetrachloride	750 U
108-05-4	Vinyl Acetate	750 U
75-27-4	Bromodichloromethane	750 U
78-87-5	1,2-Dichloropropane	750 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	750 U
79-01-6	Trichloroethene	750 U
124-48-1	Dibromochloromethane	750 U
79-00-5	1,1,2-Trichloroethane	750 U
71-43-2	Benzene	750 U
10061-02-6	trans-1,3-Dichloropropene	750 U
110-75-8	2-Chloroethylvinylether	750 U
75-25-2	Bromoform	750 U
108-10-1	4-Methyl-2-Pentanone	3700 U
591-78-6	2-Hexanone	3700 U
127-18-4	Tetrachloroethene	520 U
79-34-5	1,1,2,2-Tetrachloroethane	7500 UJ
108-88-3	Toluene	750 U
108-90-7	Chlorobenzene	750 U
100-41-4	Ethylbenzene	750 U
100-42-5	Styrene	750 U
1330-20-7	Total Xylenes	1500 U
75-69-4	Trichlorofluoromethane	1500 U
76-13-1	1,1,2-Trichlorotrifluoroethane	1500 U

Surrogate Recoveries

d8-Toluene	91.5%
Bromofluorobenzene	94.5%
d4-1,2-Dichloroethane	85.4%

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: mb1016A
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: NA

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 5.0 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**	**6.4**
67-64-1	**Acetone**	**2.2 J**
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	103%
d4-1,2-Dichloroethane	96.9%

Data Reporting Qualifiers

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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: B971A
Matrix: Soils/Sediments

Sample: 42283-1

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 4.28 gm (Dry Weight)
Percent Moisture: 18.4%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.3 U
74-83-9	Bromomethane	2.3 U
75-01-4	Vinyl Chloride	2.3 U
75-00-3	Chloroethane	2.3 U
75-09-2	**Methylene Chloride**	**4.1 B**
67-64-1	**Acetone**	**17 B**
75-15-0	Carbon Disulfide	1.2 U
75-35-4	1,1-Dichloroethene	1.2 U
75-34-3	1,1-Dichloroethane	1.2 U
156-60-5	Trans-1,2-Dichloroethene	1.2 U
156-59-2	Cis-1,2-Dichloroethene	1.2 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.2 U
78-93-3	2-Butanone	5.8 U
71-55-6	1,1,1-Trichloroethane	1.2 U
56-23-5	Carbon Tetrachloride	1.2 U
108-05-4	Vinyl Acetate	1.2 U
75-27-4	Bromodichloromethane	1.2 U
78-87-5	1,2-Dichloropropane	1.2 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.2 U
79-01-6	Trichloroethene	1.2 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	1.2 U
71-43-2	Benzene	1.2 U
10061-02-6	trans-1,3-Dichloropropene	1.2 U
110-75-8	2-Chloroethylvinylether	1.2 U
75-25-2	Bromoform	1.2 U
108-10-1	4-Methyl-2-Pentanone	5.8 U
591-78-6	2-Hexanone	5.8 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.2 U
108-88-3	Toluene	1.2 U
108-90-7	Chlorobenzene	1.2 U
100-41-4	Ethylbenzene	1.2 U
100-42-5	Styrene	1.2 U
1330-20-7	Total Xylenes	2.3 U
75-69-4	Trichlorofluoromethane	2.3 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.3 U

Surrogate Recoveries

d8-Toluene	97.9%
Bromofluorobenzene	106%
d4-1,2-Dichloroethane	97.2%

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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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: B971B
Matrix: Soils/Sediments

Sample: 42283-2
QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
VTSR: 10/14/92
Report: 11/12/92 MAC:D sk

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 1.85 gm (Dry Weight)
Percent Moisture: 92.0%

CAS Number		µg/Kg
74-87-3	Chloromethane	5.4 U
74-83-9	Bromomethane	5.4 U
75-01-4	Vinyl Chloride	5.4 U
75-00-3	Chloroethane	5.4 U
75-09-2	**Methylene Chloride**	**7.8 B**
67-64-1	**Acetone**	**14 B**
75-15-0	Carbon Disulfide	2.7 U
75-35-4	1,1-Dichloroethene	2.7 U
75-34-3	1,1-Dichloroethane	2.7 U
156-60-5	Trans-1,2-Dichloroethene	2.7 U
156-59-2	Cis-1,2-Dichloroethene	2.7 U
67-66-3	Chloroform	2.7 U
107-06-2	1,2-Dichloroethane	2.7 U
78-93-3	2-Butanone	14 U
71-55-6	1,1,1-Trichloroethane	2.7 U
56-23-5	Carbon Tetrachloride	2.7 U
108-05-4	Vinyl Acetate	2.7 U
75-27-4	Bromodichloromethane	2.7 U
78-87-5	1,2-Dichloropropane	2.7 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	2.7 U
79-01-6	Trichloroethene	2.7 U
124-48-1	Dibromochloromethane	2.7 U
79-00-5	1,1,2-Trichloroethane	2.7 U
71-43-2	Benzene	2.7 U
10061-02-6	trans-1,3-Dichloropropene	2.7 U
110-75-8	2-Chloroethylvinylether	2.7 U
75-25-2	Bromoform	2.7 U
108-10-1	4-Methyl-2-Pentanone	14 U
591-78-6	2-Hexanone	14 U
127-18-4	Tetrachloroethene	1.9 U
79-34-5	1,1,2,2-Tetrachloroethane	2.7 U
108-88-3	Toluene	2.7 U
108-90-7	Chlorobenzene	2.7 U
100-41-4	Ethylbenzene	2.7 U
100-42-5	Styrene	2.7 U
1330-20-7	**Total Xylenes**	**4.6 J**
75-69-4	Trichlorofluoromethane	5.4 U
76-13-1	1,1,2-Trichlorotrifluoroethane	5.4 U

Surrogate Recoveries

d8-Toluene	97.6%
Bromofluorobenzene	112%
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.

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

Lab ID: B971D
Matrix: Soils/Sediments

Sample: 42283-4

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 4.69 gm (Dry Weight)
Percent Moisture: 7.4%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.1 U
74-83-9	Bromomethane	2.1 U
75-01-4	Vinyl Chloride	2.1 U
75-00-3	Chloroethane	2.1 U
75-09-2	**Methylene Chloride**	**8.5 B**
67-64-1	**Acetone**	**6.8 B**
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	1.1 U
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	2-Butanone	11 UJ
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	1.1 U
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.3 U
591-78-6	**2-Hexanone**	**5.6**
127-18-4	Tetrachloroethene	0.7 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	**Toluene**	**2.5**
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	Total Xylenes	2.1 U
75-69-4	Trichlorofluoromethane	2.1 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.1 U

Surrogate Recoveries

d8-Toluene	111%
Bromofluorobenzene	95.8%
d4-1,2-Dichloroethane	95.8%

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.

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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: B971Dms
Matrix: Soils/Sediments

Sample: 42283-4
Matrix Spike
QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 4.68 gm (Dry Weight)
Percent Moisture: 7.4%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.1 U
74-83-9	Bromomethane	2.1 U
75-01-4	Vinyl Chloride	2.1 U
75-00-3	Chloroethane	2.1 U
75-09-2	**Methylene Chloride**	**2.4 B**
67-64-1	**Acetone**	**6.0 B**
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	2-Butanone	5.3 U
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.3 U
591-78-6	2-Hexanone	5.3 U
127-18-4	Tetrachloroethene	0.7 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	Total Xylenes	2.1 U
75-69-4	Trichlorofluoromethane	2.1 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.1 U

Surrogate Recoveries

d8-Toluene	104%
Bromofluorobenzene	93.1%
d4-1,2-Dichloroethane	99.1%

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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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: B971Dmsd
Matrix: Soils/Sediments

Sample: **42283-4**
Matrix Spike Duplicate
QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 4.64 gm (Dry Weight)
Percent Moisture: 7.4%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.2 U
74-83-9	Bromomethane	2.2 U
75-01-4	Vinyl Chloride	2.2 U
75-00-3	Chloroethane	2.2 U
75-09-2	**Methylene Chloride**	**1.7 JB**
67-64-1	**Acetone**	**5.8 B**
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	-
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	2-Butanone	5.4 U
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	-
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	-
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.4 U
591-78-6	2-Hexanone	5.4 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	Toluene	-
108-90-7	Chlorobenzene	-
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	Total Xylenes	2.2 U
75-69-4	Trichlorofluoromethane	2.2 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.2 U

Surrogate Recoveries

d8-Toluene	103%
Bromofluorobenzene	95.3%
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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SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ARI Job No: B971

Client: Burlington
Project: Pier 91

Sample No: 42283-4

COMPOUND	SPIKE ADDED (µg/Kg)	SAMPLE CONC (µg/Kg)	MS CONC (µg/Kg)	MS % REC	QC LIMITS REC
1,1-Dichloroethene	53.5	0	72.5	136	59-172
Trichloroethene	53.5	0	61.0	114	62-137
Benzene	53.5	0	62.4	117	66-142
Toluene	53.5	2.5	63.7	114	59-139
Chlorobenzene	53.5	0	59.5	111	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	53.9	70.5	131	3.7	22	59-172
Trichloroethene	53.9	58.5	109	4.5	24	62-137
Benzene	53.9	63.7	118	-0.9	21	66-142
Toluene	53.9	62.6	112	1.8	21	59-139
Chlorobenzene	53.9	58.0	108	2.7	21	60-133

RPD: 1 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: 11/10/92 MAC:D sk

FORM III VOA-2

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

Lab ID: B971E
Matrix: Soils/Sediments

Sample: 42283-5

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 3.80 gm (Dry Weight)
Percent Moisture: 25.0%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.6 U
74-83-9	Bromomethane	2.6 U
75-01-4	Vinyl Chloride	2.6 U
75-00-3	Chloroethane	2.6 U
75-09-2	**Methylene Chloride**	**3.9 B**
67-64-1	**Acetone**	**11 B**
75-15-0	Carbon Disulfide	1.3 U
75-35-4	1,1-Dichloroethene	1.3 U
75-34-3	1,1-Dichloroethane	1.3 U
156-60-5	Trans-1,2-Dichloroethene	1.3 U
156-59-2	Cis-1,2-Dichloroethene	1.3 U
67-66-3	Chloroform	1.3 U
107-06-2	1,2-Dichloroethane	1.3 U
78-93-3	2-Butanone	6.6 U
71-55-6	1,1,1-Trichloroethane	1.3 U
56-23-5	Carbon Tetrachloride	1.3 U
108-05-4	Vinyl Acetate	1.3 U
75-27-4	Bromodichloromethane	1.3 U
78-87-5	1,2-Dichloropropane	1.3 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.3 U
79-01-6	Trichloroethene	1.3 U
124-48-1	Dibromochloromethane	1.3 U
79-00-5	1,1,2-Trichloroethane	1.3 U
71-43-2	Benzene	1.3 U
10061-02-6	trans-1,3-Dichloropropene	1.3 U
110-75-8	2-Chloroethylvinylether	1.3 U
75-25-2	Bromoform	1.3 U
108-10-1	4-Methyl-2-Pentanone	6.6 U
591-78-6	2-Hexanone	6.6 U
127-18-4	Tetrachloroethene	0.9 U
79-34-5	1,1,2,2-Tetrachloroethane	1.3 U
108-88-3	Toluene	1.3 U
108-90-7	Chlorobenzene	1.3 U
100-41-4	Ethylbenzene	1.3 U
100-42-5	Styrene	1.3 U
1330-20-7	Total Xylenes	2.6 U
75-69-4	Trichlorofluoromethane	2.6 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.6 U

Surrogate Recoveries

d8-Toluene	108%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	93.9%

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.

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

Lab ID: B971F
Matrix: Soils/Sediments

Sample: 42283-6
QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/16/92

Amount Analyzed: 4.81 gm (Dry Weight)
Percent Moisture: 4.9%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.1 U
74-83-9	Bromomethane	2.1 U
75-01-4	Vinyl Chloride	2.1 U
75-00-3	Chloroethane	2.1 U
75-09-2	**Methylene Chloride**	**2.4 B**
67-64-1	**Acetone**	**26 B**
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	5.2 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	5.2 U
591-78-6	2-Hexanone	5.2 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	2.1 U
75-69-4	Trichlorofluoromethane	2.1 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.1 U

Surrogate Recoveries

d8-Toluene	98.6%
Bromofluorobenzene	108%
d4-1,2-Dichloroethane	99.5%

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: 1020mb
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: NA

Instrument: FINN 5
Date Analyzed: 10/20/92

Amount Analyzed: 5.0 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**	**2.6**
67-64-1	**Acetone**	**3.8 J**
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	99.1%
Bromofluorobenzene	103%
d4-1,2-Dichloroethane	94.7%

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.

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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: 1020mb
Matrix: Soils/Sediments

Sample: Method Blank - Medium

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: NA

Instrument: FINN 5
Date Analyzed: 10/20/92

Amount Analyzed: 0.040 gm (Dry Weight Equivalent)
Percent Moisture: NA

CAS Number		µg/Kg
74-87-3	Chloromethane	250 U
74-83-9	Bromomethane	250 U
75-01-4	Vinyl Chloride	250 U
75-00-3	Chloroethane	250 U
75-09-2	**Methylene Chloride**	**190 J**
67-64-1	**Acetone**	**350 J**
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	630 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	630 U
591-78-6	2-Hexanone	630 U
127-18-4	Tetrachloroethene	88 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	130 U
100-42-5	Styrene	130 U
1330-20-7	Total Xylenes	250 U
75-69-4	Trichlorofluoromethane	250 U
76-13-1	**1,1,2-Trichlorotrifluoroethane**	**1300**

Surrogate Recoveries

d8-Toluene	102%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	96.6%

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.

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: B971Cdup
Matrix: Soils/Sediments

Sample: 42283-3

QC Report No: B971 - Burlington
Project: Pier 91

Data Release Authorized: _____
Report: 11/12/92 MAC:D sk

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/20/92

Amount Analyzed: 0.037 gm (Dry Weight)
Percent Moisture: 8.7%

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**	**510 B**
67-64-1	**Acetone**	**430 JB**
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	140 U
108-90-7	Chlorobenzene	140 U
100-41-4	Ethylbenzene	140 U
100-42-5	Styrene	140 U
1330-20-7	Total Xylenes	270 U
75-69-4	Trichlorofluoromethane	270 U
76-13-1	1,1,2-Trichlorotrifluoroethane	270 U

Surrogate Recoveries

d8-Toluene	99.6%
Bromofluorobenzene	105%
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.

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

Lab ID: MB1019
Matrix: Soils/Sediments

Sample: Method Blank

QC Report No: B972 - Burlington Env.
Project: Pier 91

VTSR: NA

Data Release Authorized:
Report: 11/09/92 MAC:ctr

Instrument: FINN 5
Date Analyzed: 10/19/92

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**	**2.5**
67-64-1	**Acetone**	**3.1 J**
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	103%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	97.9%

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.

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

Lab ID: B972A
Matrix: Soils/Sediments

Sample: 42266-1

QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.5 gm (Dry Weight)
Percent Moisture: 17.0%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.2 U
74-83-9	Bromomethane	2.2 U
75-01-4	Vinyl Chloride	2.2 U
75-00-3	Chloroethane	2.2 U
75-09-2	**Methylene Chloride**	**5.1 B**
67-64-1	**Acetone**	**12 B**
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	1.1 U
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	2-Butanone	5.5 U
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	1.1 U
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.5 U
591-78-6	2-Hexanone	5.5 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	Toluene	1.1 U
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	Total Xylenes	2.2 U
75-69-4	Trichlorofluoromethane	2.2 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.2 U

Surrogate Recoveries

d8-Toluene	106%
Bromofluorobenzene	104%
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: B972C
Matrix: Soils/Sediments

Sample: 42266-3

QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.9 gm (Dry Weight)
Percent Moisture: 2.3%

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**	**2.4 B**
67-64-1	Acetone	5.1 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	5.1 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	5.1 U
591-78-6	2-Hexanone	5.1 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	105%
Bromofluorobenzene	101%
d4-1,2-Dichloroethane	99.5%

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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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: B972E
Matrix: Soils/Sediments

Sample: 42266-5

QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.8 gm (Dry Weight)
Percent Moisture: 5.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.1 U
74-83-9	Bromomethane	2.1 U
75-01-4	Vinyl Chloride	2.1 U
75-00-3	Chloroethane	2.1 U
75-09-2	**Methylene Chloride**	**14 B**
67-64-1	Acetone	5.2 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	5.2 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	5.2 U
591-78-6	2-Hexanone	5.2 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	2.1 U
75-69-4	Trichlorofluoromethane	2.1 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.1 U

Surrogate Recoveries

d8-Toluene	104%
Bromofluorobenzene	98.4%
d4-1,2-Dichloroethane	99.3%

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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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: B972G
Matrix: Soils/Sediments

Sample: 42266-7

QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.7 gm (Dry Weight)
Percent Moisture: 7.9%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.1 U
74-83-9	Bromomethane	2.1 U
75-01-4	Vinyl Chloride	2.1 U
75-00-3	Chloroethane	2.1 U
75-09-2	**Methylene Chloride**	**4.9 B**
67-64-1	Acetone	5.3 U
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	1.1 U
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	2-Butanone	5.3 U
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	1.1 U
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.3 U
591-78-6	2-Hexanone	5.3 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	Toluene	1.1 U
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	Total Xylenes	2.1 U
75-69-4	Trichlorofluoromethane	2.1 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.1 U

Surrogate Recoveries

d8-Toluene	103%
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.

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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: B972H
Matrix: Soils/Sediments

Sample: 42266-8

QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.4 gm (Dry Weight)
Percent Moisture: 16.3%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.3 U
74-83-9	Bromomethane	2.3 U
75-01-4	Vinyl Chloride	2.3 U
75-00-3	Chloroethane	2.3 U
75-09-2	**Methylene Chloride**	**2.4 B**
67-64-1	**Acetone**	**26 B**
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	1.1 U
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	2-Butanone	5.7 U
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	1.1 U
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.7 U
591-78-6	2-Hexanone	5.7 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	Toluene	1.1 U
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	Total Xylenes	2.3 U
75-69-4	Trichlorofluoromethane	2.3 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.3 U

Surrogate Recoveries

d8-Toluene	103%
Bromofluorobenzene	105%
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.

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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: B972I
Matrix: Soils/Sediments

Sample: 42266-9

QC Report No: B972 - Burlington Env.
Project: Pier 91

VTSR: 10/14/92

Data Release Authorized:
Report: 11/09/92 MAC:ctr

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.3 gm (Dry Weight)
Percent Moisture: 15.7%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.3 U
74-83-9	Bromomethane	2.3 U
75-01-4	Vinyl Chloride	2.3 U
75-00-3	Chloroethane	2.3 U
75-09-2	**Methylene Chloride**	**3.5 B**
67-64-1	**Acetone**	**29 B**
75-15-0	Carbon Disulfide	1.2 U
75-35-4	1,1-Dichloroethene	1.2 U
75-34-3	1,1-Dichloroethane	1.2 U
156-60-5	Trans-1,2-Dichloroethene	1.2 U
156-59-2	Cis-1,2-Dichloroethene	1.2 U
67-66-3	Chloroform	1.2 U
107-06-2	1,2-Dichloroethane	1.2 U
78-93-3	2-Butanone	5.8 U
71-55-6	1,1,1-Trichloroethane	1.2 U
56-23-5	Carbon Tetrachloride	1.2 U
108-05-4	Vinyl Acetate	1.2 U
75-27-4	Bromodichloromethane	1.2 U
78-87-5	1,2-Dichloropropane	1.2 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.2 U
79-01-6	Trichloroethene	1.2 U
124-48-1	Dibromochloromethane	1.2 U
79-00-5	1,1,2-Trichloroethane	1.2 U
71-43-2	Benzene	1.2 U
10061-02-6	trans-1,3-Dichloropropene	1.2 U
110-75-8	2-Chloroethylvinylether	1.2 U
75-25-2	Bromoform	1.2 U
108-10-1	4-Methyl-2-Pentanone	5.8 U
591-78-6	2-Hexanone	5.8 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.2 U
108-88-3	Toluene	1.2 U
108-90-7	Chlorobenzene	1.2 U
100-41-4	Ethylbenzene	1.2 U
100-42-5	Styrene	1.2 U
1330-20-7	Total Xylenes	2.3 U
75-69-4	Trichlorofluoromethane	2.3 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.3 U

Surrogate Recoveries

d8-Toluene	108%
Bromofluorobenzene	98.4%
d4-1,2-Dichloroethane	95.6%

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.

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: MB1020
Matrix: Soils/Sediments

Sample: Method Blank
Medium Level
QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: NA

Instrument: FINN 5
Date Analyzed: 10/20/92

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**	**150 J**
67-64-1	**Acetone**	**280 J**
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**	**1000**

Surrogate Recoveries

d8-Toluene	102%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	96.6%

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.

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: B972BR
Matrix: Soils/Sediments

Sample: **42266-2**
Medium Level
QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/20/92

Amount Analyzed: 0.017 gm (Dry Weight)
Percent Moisture: 12.7%

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**	**750 B**
67-64-1	**Acetone**	**1200 JB**
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**	**360**
108-90-7	Chlorobenzene	290 U
100-41-4	Ethylbenzene	290 U
100-42-5	Styrene	290 U
1330-20-7	**Total Xylenes**	**270 M**
75-69-4	Trichlorofluoromethane	590 U
76-13-1	1,1,2-Trichlorotrifluoroethane	590 U

Surrogate Recoveries

d8-Toluene	104%
Bromofluorobenzene	95.2%
d4-1,2-Dichloroethane	113%

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: B972D
Matrix: Soils/Sediments

Sample: 42266-4

QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/19/92

Amount Analyzed: 4.6 gm (Dry Weight)
Percent Moisture: 10.2%

CAS Number		µg/Kg
74-87-3	Chloromethane	2.2 U
74-83-9	Bromomethane	2.2 U
75-01-4	Vinyl Chloride	2.2 U
75-00-3	Chloroethane	2.2 U
75-09-2	**Methylene Chloride**	**1.8 JB**
67-64-1	**Acetone**	**94 B**
75-15-0	Carbon Disulfide	1.1 U
75-35-4	1,1-Dichloroethene	1.1 U
75-34-3	1,1-Dichloroethane	1.1 U
156-60-5	Trans-1,2-Dichloroethene	1.1 U
156-59-2	Cis-1,2-Dichloroethene	1.1 U
67-66-3	Chloroform	1.1 U
107-06-2	1,2-Dichloroethane	1.1 U
78-93-3	**2-Butanone**	**5.9**
71-55-6	1,1,1-Trichloroethane	1.1 U
56-23-5	Carbon Tetrachloride	1.1 U
108-05-4	Vinyl Acetate	1.1 U
75-27-4	Bromodichloromethane	1.1 U
78-87-5	1,2-Dichloropropane	1.1 U

CAS Number		µg/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1 U
79-01-6	Trichloroethene	1.1 U
124-48-1	Dibromochloromethane	1.1 U
79-00-5	1,1,2-Trichloroethane	1.1 U
71-43-2	Benzene	1.1 U
10061-02-6	trans-1,3-Dichloropropene	1.1 U
110-75-8	2-Chloroethylvinylether	1.1 U
75-25-2	Bromoform	1.1 U
108-10-1	4-Methyl-2-Pentanone	5.4 U
591-78-6	2-Hexanone	5.4 U
127-18-4	Tetrachloroethene	0.8 U
79-34-5	1,1,2,2-Tetrachloroethane	1.1 U
108-88-3	**Toluene**	**1.3**
108-90-7	Chlorobenzene	1.1 U
100-41-4	Ethylbenzene	1.1 U
100-42-5	Styrene	1.1 U
1330-20-7	**Total Xylenes**	**1.7 J**
75-69-4	Trichlorofluoromethane	2.2 U
76-13-1	1,1,2-Trichlorotrifluoroethane	2.2 U

Surrogate Recoveries

d8-Toluene	106%
Bromofluorobenzene	102%
d4-1,2-Dichloroethane	96.4%

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.

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: B972FM
Matrix: Soils/Sediments

Sample: 42266-6
Medium Level
QC Report No: B972 - Burlington Env.
Project: Pier 91

Data Release Authorized:
Report: 11/09/92 MAC:ctr

VTSR: 10/14/92

Instrument: FINN 5
Date Analyzed: 10/20/92

Amount Analyzed: 0.016 gm (Dry Weight)
Percent Moisture: 19.3%

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**	**1400 B**
67-64-1	**Acetone**	**1100 JB**
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	8600 UJ
108-88-3	Toluene	310 U
108-90-7	Chlorobenzene	310 U
100-41-4	Ethylbenzene	310 U
100-42-5	Styrene	310 U
1330-20-7	Total Xylenes	630 U
75-69-4	Trichlorofluoromethane	630 U
76-13-1	1,1,2-Trichlorotrifluoroethane	630 U

Surrogate Recoveries

d8-Toluene	87.4%
Bromofluorobenzene	103%
d4-1,2-Dichloroethane	90.7%

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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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.

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

Chain of Custody/ Laboratory Analysis Request

DATE 10-14-92 PAGE 1 OF 2

PROJECT Pier 91 #
CLIENT INFO. CONTACT K. Kreps
CHEMPRO DIVISION/GENERATOR NAME
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	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-121-2-4	10-7	940	42266-1	soil		X	X															2	
2 CP-121-6-8	10-7	1010	42266-2	soil		X	X															2	
3 CP-114-2-4	10-8	0830	42266-3	soil		X	X															2	
4 CP-114-6-8	10-8	0850	42266-4	soil		X	X															2	
5 CP-115A-2-4	10-8	1300	42266-5	soil		X	X															2	
6 CP-115A-6-8	10-8	1335	42266-6	soil		X	X															2	
7 CP-122A-2-4	10-9	0950	42266-7	soil		X	X															2	
8 CP-122A-6-8	10-9	0920	42266-8	soil		X	X															2	

Relinquished By	Relinquished By	Relinquished By
T. Claus		
Signature T. Claus	Signature	Signature
Printed Name BEI	Printed Name	Printed Name
Firm 10-14-92	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:

Pier 91 Project
Detection Limits

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 10-14-92 PAGE 2 OF 2

PROJECT P91 #
CLIENT INFO. CONTACT K. Kreps
CHEMPRO DIVISION/GENERATOR NAME BET
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-922A-68	10-9	0820	42266-9	soil		X	X															2	
2.																							
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							

Relinquished By	Relinquished By	Relinquished By
Signature T. Claus	Signature	Signature
Printed Name BET	Printed Name	Printed Name
Firm 10-14-92	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:

Pier91 Project Detection Limits

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

(LAB-200 Rev. 10/90)

Client: Burl ENV.	Project #:	
	Project: Pier 91	
Client Contact: Kathy Koeps	PO#:	Logged in by: J.F.

Sample Acknowledgement

Page 1 of 1

ARI Job Number: B972	
VTSR: 10/14/92	Turn-Around: 11/14/92
	Requested TA:

Billing Address:

Date of Transmittal: 10/15/92 Time: 12:30

Addressee: Kathy Koeps 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	42266-1	B972 A	Soil	1 8oz TAL/gl. 1 2oz gl.
2	-2	B		
3	-3	C		
4	-4	D		
5	-5	E		
6	-6	F		
7	-7	G		
8	-8	H		
9	-9	I		
10				

NO Samples	Matrix	Parameter	Meth No	Estimated Cost Per Sample	Estimated Extended Costs
9	Soil	VOA	8240	225.00	2,025.00
9	↓	PCB	8080	80.00	720.00
				TOTAL	$2,745.00

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).